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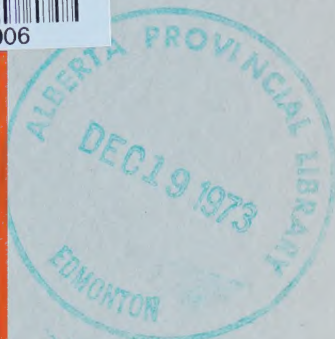
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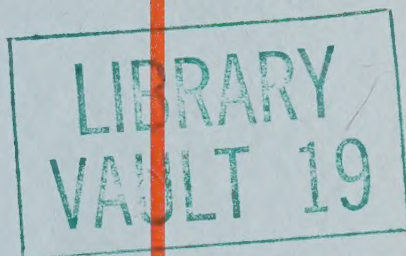


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LAND USE  
and  
RESOURCE DEVELOPMENT  
in the  
EASTERN SLOPES



PROCEEDINGS  
OF THE  
PUBLIC HEARINGS



JUNE - JULY, 1973

PART IIIA

CALGARY

ENVIRONMENT CONSERVATION  
AUTHORITY

ALBERTA





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AUTHORITY**

**9912-107 Street  
Edmonton, Alberta  
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OLDMAN RIVER BASIN

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| COLEMAN, JUNE 11 & 12    | - | PART I  |
| LETHBRIDGE, JUNE 13 & 14 | - | PART II |

BOW RIVER BASIN

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| CALGARY, JUNE 18      | - | PART III - A |
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| ROCKY MOUNTAIN HOUSE, JUNE 26 | - | PART V  |
| RED DEER, JUNE 28 & 29        | - | PART VI |

ATHABASCA RIVER BASIN

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| HINTON, JULY 3          | - | PART VII  |
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| GRANDE PRAIRIE, JULY 12 | - |         |

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|   |            |
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| - | PART X - A |
| - | PART X - B |

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SEPTEMBER, 1973

## FOREWORD

Geographically, Alberta is a land of diversity. From the dry irrigated croplands of the south through the lush farming and ranching country of central Alberta to the sparsely settled wildlands of the north the landscape presents a constantly changing panorama.

Nowhere, however, is diversity more apparent than in the approach to the Rockies. There indeed, as one enters the region of the Eastern Slopes, Alberta takes on its most dramatic change.

As though to prepare one in advance for the enormity of the Rocky Mountains, the landscape assumes a rolling gait as the farmlands and ranchlands of the plains give way to the forested areas of the foothills.

In this area, which has come to be known as the Eastern Slopes, lands have been mostly protected and preserved for public ownership in the name of the Crown, and important national and provincial parks are located here.

To many Albertans, the Eastern Slopes represent an area of, as yet, relatively undisturbed forests which should be preserved in their natural state for posterity.

To others, the area represents a bountiful supply of valuable resources which should be developed to the benefit of Albertans.

Some others view the Eastern Slopes in the light of combined benefits and hope that they can be made to yield their riches without prejudice to the natural state.

Of the treasures that reside in the Eastern Slopes, recreation ranks high in the minds of many people and indeed, recreation in its many forms is now enjoyed in the Eastern Slopes in both winter and summer by many thousands of people each year.



In addition, land in the Eastern Slopes is now used or is proposed for use for such purposes as tourism, urban development, forest utilization, mineral resource industries, surface mining, oil and gas development, underground coal mining, agriculture, watershed conservation, domestic water supplies, hydroelectric power developments, wildlife and fishing management, wilderness and natural areas, institutional use by charitable, religious and other groups, archaeological sites, research, Indian reservations and national and provincial parks.

These various present and potential uses of resources within the area may either have no effect on each other, complement each other, conflict with each other, or relate to each other in sequential ways.

In order to publicly explore these interests and discover the concerns they generate, the Environment Conservation Authority was requested on behalf of the Government of Alberta to hold comprehensive and wide-ranging hearings on Land Use and Resource Development in the Eastern Slopes.

It was the objective of the hearings to enquire into all potential uses and to formulate ways in which optimum benefits and environment conservation could be achieved now and for the future from the various resources of the Eastern Slopes.

A further objective was to consider and evaluate the views of the public on specific recreational and tourist development proposals for the area. Finally, the Authority would lay the views presented to it, along with its own recommendations thereon, before the Government of Alberta.

For the purpose of the public hearings, the Eastern Slopes were divided into five separate districts corresponding to the five major watershed basins and outlined by the statutory boundaries of the four Regional Planning Areas and Improvement District No. 14.

The eastern boundary of the area was taken as the eastern edge of the foothills, prescribed by an arc lying to the west of the cities of Lethbridge, Calgary, Red Deer, Edmonton and Grande Prairie.

As background to the hearings, the Environment Conservation Authority released a series of 12 Information Bulletins; five of these pertained specifically to the separate watershed basins and were prepared by the individual regional planning commissions.

Hearings were held (during June and July of 1973) in each of the watershed basins as well as in the five major cities.

The present publication constitutes the Proceedings of the Public Hearings on Land Use and Resource Development in the Eastern Slopes. A separate volume has been allocated for each location, and each volume contains a complete transcript of all presentations heard at that location as well as the discussions which followed.

In addition, a final volume contains all written submissions which were received prior to and following the hearings, but which were not presented verbally at the hearings, along with an index to all volumes.



## ACKNOWLEDGEMENTS

The contribution that a public hearing can make to the advancement of any subject depends very largely on the submissions, briefs and presentations made to it by members of the public.

The Environment Conservation Authority is particularly appreciative of the efforts of the very large number of individuals, groups and associations that contributed both orally and in writing to its series of hearings on Land Use and Resource Development in the Eastern Slopes.

For those who prepare submissions it is most desirable that they have ready access to relevant information on the subject. This involves not only compiling and presenting the information in an acceptable form, but also distributing it widely to the interested public.

In this most important aspect of the work leading up to the public hearings the Authority received considerable assistance from the Regional Planning Commissions of the individual watershed basins covered by the hearings.

Not only did the officers and staffs of these commissions prepare comprehensive and highly informative position statements on behalf of the Authority for each basin, but at each location a senior official of the commission presented the position statement to the Authority at the beginning of the hearing, and most ably responded to the detailed questioning which followed.

For these invaluable services the Authority expresses its sincere thanks to the officials and staff of the Oldman River, Calgary, Red Deer, and Peace River Regional Planning Commissions and Improvement District No. 14 of the Provincial Planning Branch.

Further very important information of value to those preparing briefs was produced by a special *ad hoc* committee of the Authority's Science Advisory Committee. For the very able discussions and recommendations on land use conflicts which they presented in Information Bulletin No. 12 the Authority wishes to compliment and thank the members of this committee.

In locating, setting up and operating its extensive chain of information centres throughout the province the efforts of the Authority would have been frustrated without the willing co-operation and expert assistance of a number of people and organizations.

To the Universities of Lethbridge, Calgary and Alberta, the Regional Planning Commissions of Oldman River, Calgary, Red Deer and Peace River, the Community Colleges of Lethbridge, Red Deer and Peace River, and the public libraries of Blairmore, Coleman, Calgary, Canmore, Drumheller, Edmonton, Edson, Grande Cache, Grande Prairie, Hinton, Lethbridge, Lloydminster, Peace River, Red Deer, Rocky Mountain House, Wetaskiwin and Whitecourt, and their staff, the Authority expresses its sincere thanks.

The Authority also gratefully acknowledges the efforts of the Conservation and Utilization Committee of the Government of Alberta for their fine pre-hearing report, "A Choice of Land Use Alternatives", and the Department of Lands and Forests for their assistance in processing the many commercial proposals for tourism and recreational projects as well as for providing a competent addition to the Authority's observer staff for the hearings.

Finally, to its own staff, whose unflinching support and tireless efforts sustained the many extended sessions of the hearings, the Authority takes pride in expressing its gratitude.

W.R. TROST,  
Chairman,  
Environment Conservation Authority.

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**LAND USE  
and  
RESOURCE DEVELOPMENT  
in the  
EASTERN SLOPES**

**INTRODUCTION**

**ENVIRONMENT CONSERVATION  
AUTHORITY**

**ALBERTA**



## INTRODUCTION

The Environment Conservation Authority was requested by the Honourable W.J. Yurko, Minister of the Environment, to hold public hearings on land use and resource development in Alberta's eastern slopes of the Rocky Mountains. These hearings took place during June and July, 1973 in Coleman, Lethbridge, Calgary, Canmore, Rocky Mountain House, Red Deer, Hinton, Edmonton, Grande Cache and Grande Prairie.

### PREPARATION FOR THE HEARINGS

In order to place background information before the public, a series of information bulletins was published. Five of these were prepared by the relevant regional planning commissions and the Provincial Planning Board, and dealt specifically with their sections of the eastern slopes. The additional bulletins were produced by the Authority or by various involved agencies.

A very extensive mailing of this material was made to interested groups, organizations and individuals. As well, a system of information centres was established in each of the hearing locations as well as in other relevant locations. These centres were supplied with sets of background publications, as well as a reading list and bibliography on the hearing subject.

Direct public contact was developed and maintained through Authority member visits throughout the study area and through continual contact with the various sections of the media.

Advertising for the hearings took various forms. Newspapers contained general notices inviting participation, specific advertisements advising of local times and locations, and "legal" notices listing what commercial recreational proposals would be discussed at specific hearing locations. Radio and television were utilized in much the same manner to inform and invite public participation.

THE PUBLIC HEARINGS

The dates and places of the hearings were as follows:

|                      |                    |
|----------------------|--------------------|
| Coleman              | June 11 and 12     |
| Lethbridge           | June 13 and 14     |
| Calgary              | June 18, 19 and 20 |
| Canmore              | June 22 and 23     |
| Rocky Mountain House | June 26            |
| Red Deer             | June 28 and 29     |
| Hinton               | July 3             |
| Edmonton             | July 5, 6 and 7    |
| Grande Cache         | July 10            |
| Grande Prairie       | July 12            |

At each of the hearings the session was opened with introductory remarks by the Authority. The regional planning commission, or the Provincial Planning Branch in the instance of Improvement District No. 14, was then called upon to give background to the concerns and problems of the area involved.

The Authority then heard briefs or summaries presented by concerned individuals and groups. The panel, consisting of: Dr. W.R. Trost, Chairman; P.J. Dowling, Vice-Chairman; and J.J. Kinisky, Member; questioned those persons submitting concerns in order to fully elucidate the concepts and opinions put forward by them.

Major proposals for development in the study area were presented following the general submissions. Here the opportunity was given for the developers to highlight their projects. They were then questioned by the Authority panel, then by interested persons in attendance at the hearing.

The last segment of the hearing at each location was given to open discussion, during which a free exchange of ideas and concerns took place.

A total of 308 submissions was made as well as 14 commercial recreational proposals.





**LAND USE  
and  
RESOURCE DEVELOPMENT  
in the  
EASTERN SLOPES**

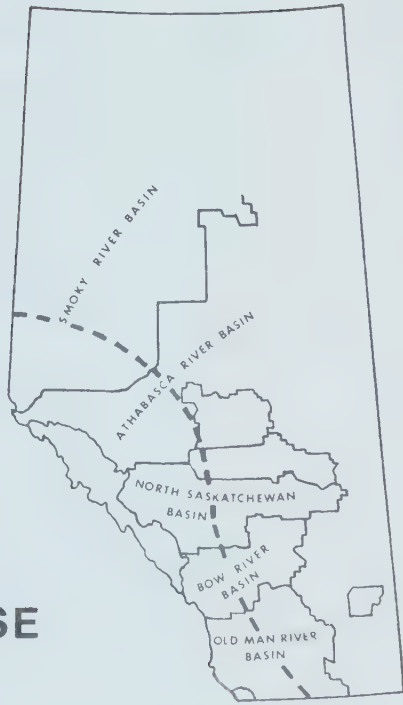
**CALGARY  
JUNE 18**

**ENVIRONMENT CONSERVATION  
AUTHORITY**

**ALBERTA**



Presented By: L.L.Schmaltz  
and  
A.R.Smith



# LAND USE

and

# RESOURCE DEVELOPMENT

in the

# EASTERN SLOPES

## BOW RIVER WATERSHED BASIN

REPORT BY CALGARY  
REGIONAL PLANNING COMMISSION

ENVIRONMENT CONSERVATION AUTHORITY

9912 - 107th Street, EDMONTON, ALBERTA, T5K 1G5

MAY, 1973

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## 1. INTRODUCTION

The Government of Alberta through the Environment Conservation Authority is to hold public hearing on land use and resource development in the Eastern Slopes of the Rocky Mountains and the Foothills Area of Alberta.

The Authority has defined this region as:-

the total mountain and foothills areas in the Province from its western and northwestern borders with British Columbia and its southern border with Montana to the eastern limits of the foothills but not including the National Parks and Indian Reservations.<sup>1</sup>

The Authority notes that in the Eastern Slopes land is used or may be used for such purposes as:-

tourism, summer and winter recreation, urban development, forest utilization, mineral resource industries, surface mining, oil and gas development, under-ground coal mining, agriculture, watershed conservation, domestic water supplies, hydroelectric power developments, wildlife and fishery management, wilderness and natural areas, institutional use (charitable and religious groups), archaeological sites, research, etc.

Public hearings are intended to serve as a vehicle

- i) to enquire into all existing and potential uses and to formulate ways in which optimum benefits and environment conservation can be achieved, now and for the future, from the various resources of the Eastern Slopes;
- ii) to consider and evaluate the views of the public on specific recreational and tourist development proposals for the

<sup>1</sup>Introductory details are extrapolated from the Environment Conservation Authority's Information Bulletin, Public Hearings on Land Use and Resource Development in the Eastern Slopes. Edmonton, 1972.

region; and

- iii) to lay the views presented to the Authority and the Authority's findings and recommendations before the Government of Alberta.

The Eastern Slopes have a distinctive physiographic and biological environment. This together with the region's history of land use, its apparent potential for resource development and the fact that it is mainly public (Crown) land managed by government agencies suggest common alternatives for future land use. However, the region is vast. Land uses are often evaluated more in terms of local needs and aspirations. For example, major streams may be regulated to accommodate downstream requirements.

To facilitate this more local interest the Environment Conservation Authority will receive submissions on proposed integrated developments in the five major watershed basins which make up the Eastern Slopes. These watersheds are: the Oldman, Bow, North Saskatchewan, Athabasca and Smoky. This paper is concerned exclusively with an examination of part of the Bow River Watershed Basin.

## 2. AIMS OF THE PAPER

The aims of the paper are:-

- i) to identify the principal geographical features and natural characteristics of the area;
- ii) to describe the administrative and land use history of the area;

- iii) to describe present land dispositions and land uses;
- iv) to describe some aspects of landscape change;
- v) to outline ongoing resource potential evaluation;
- vi) to pose some questions concerning planning for future land use and resource development; and
- vii) to suggest additional reference materials.

The paper is not intended to be an analysis of conditions, past or present, in the Bow River Watershed Basin. Neither does it seek to express preferences for future land uses in the area. It is simply a general information paper. By touching on several aspects of land use and resource development the paper may assist individuals and organizations in making contributions at public hearings.

### 3. THE STUDY AREA

The portion of the Bow River Watershed Basin discussed in this paper is shown in Figure 1. The study area ("the area") includes the Bow River and its tributaries situated between the eastern boundary of Banff National Park to the west and the western boundaries of the Municipal Districts of Rocky View No. 44 and Foothills No. 31. To the north the boundary is the watershed divide between the Ghost River drainage and the Red Deer River drainage. The southern limit is marked by the watershed divide between the Highwood River drainage and the Livingstone River

drainage. These boundaries generally divide the unsettled public lands of the area from settled private lands.

An important part of the area is the Canmore Corridor which is here defined as that part of the Bow River valley lying between the eastern boundary of Banff National Park and Seebe, and including the mountains surrounding the valley. The Corridor is settled and contains substantial amounts of privately owned land.

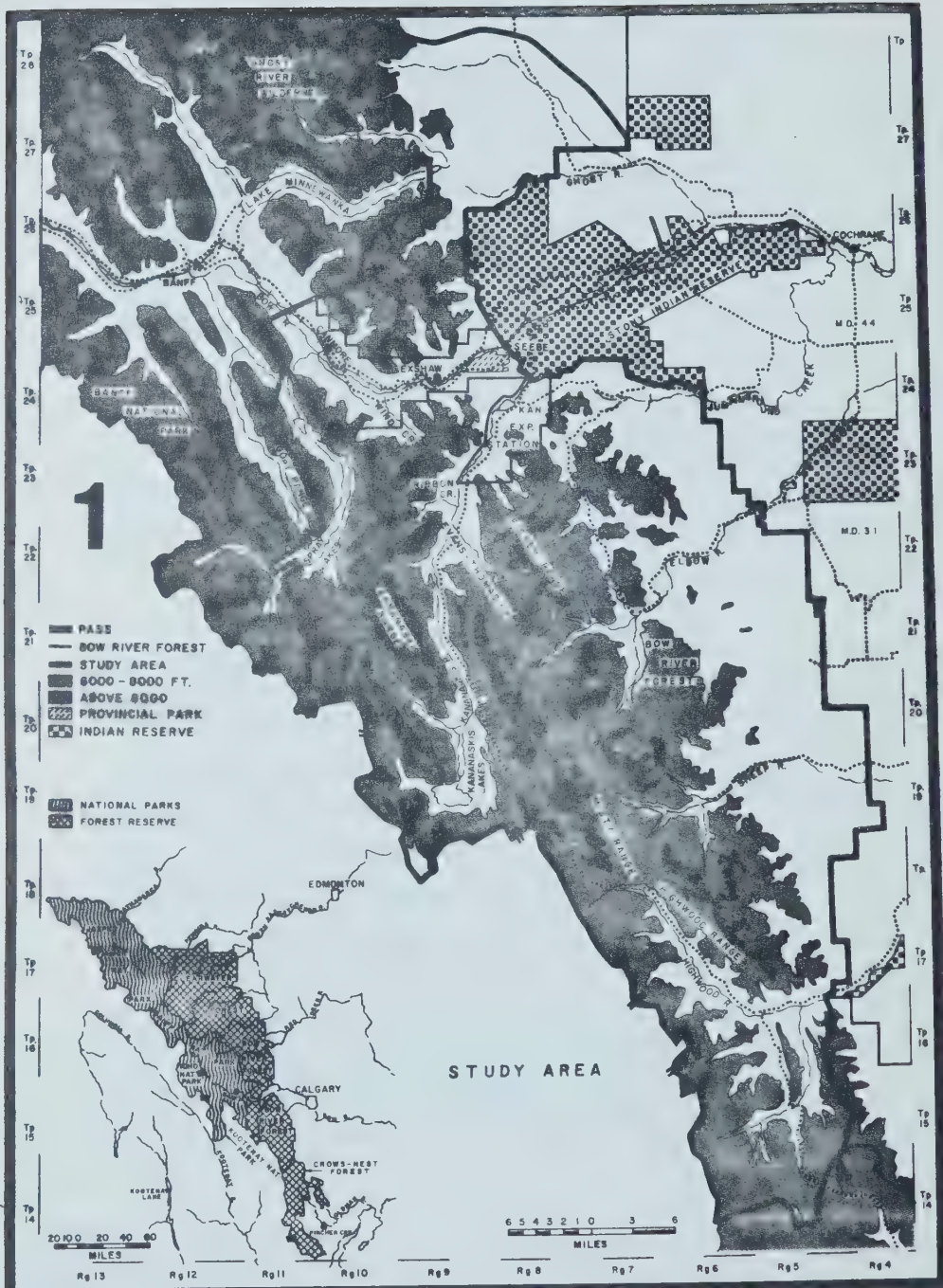
#### 4. GEOGRAPHICAL DESCRIPTION

In this section the location, physical relief, drainage, geology and geomorphology of the study area are briefly discussed.

##### 4.1 Location

The Bow River Basin is readily accessible to Alberta residents and out-of-province visitors. The Canmore Corridor is but a four-hour drive or less from most of Alberta's major urban centres. The Corridor is only about one hour's drive from Calgary, a rapidly growing city of 425,000. Nearby Banff townsite and the Rocky Mountain national parks attract an international tourist clientele.

The Trans-Canada Highway (No. 1), the 1A Highway and the Canadian Pacific Railway (C.P.R.) bisect the area from east to west, thereby making this segment of the Bow Valley a nationally important transportation route. The





gravel surface Forestry Trunk road, parts of which are being improved, links Morley with Hinton and Kananaskis with Coleman. This is the principal north-south route.

An excellent system of hardtopped highways through the Rocky Mountain national parks provides access from various points in Alberta and British Columbia. Additional roads to and through the area could be developed by improving the existing network of rough and seasonally impassable forestry roads. Routes which might be upgraded include the one linking Jumpingpound Creek with the Elbow River, the rough track along the course of Smith-Dorien Creek, and the route which crosses Elk Pass to the Elk River in British Columbia.

The area is also accessible to a continental and international population through Calgary's International Airport. The airport is now being expanded to accommodate the largest types of commercial aircraft. The little-used airstrip at Banff will disappear when the Trans-Canada Highway is four-laned through Banff National Park. The development of a new airstrip in the Canmore Corridor is under active discussion by interested organizations.

In sum the Bow River Watershed Basin may be reached by road, rail and air. Opportunities exist to improve this accessibility. The nature of communication links which

are eventually developed may greatly influence plans for land use both in the area itself and in lands adjacent to it.

#### 4.2 Topography

The topography of the area is varied. Rolling, wooded hills where relief is generally less than 6,000 feet characterize the foothills along the eastern and north-eastern boundaries. There are occasional stretches of relatively flat land (e.g. Morley Flats). For the most part, however, the terrain is rugged. A series of high, parallel northwest-southeast mountain ridges (the Front Ranges: e.g. Kananaskis, Opal, Misty Ranges) are separated by deep river valleys.

Slopes on the eastern margins of the area are relatively gentle. Where the terrain becomes more pronounced towards the west, steep and often near vertical slopes prevail.

#### 4.3 Drainage

The principal streams draining the area are the Ghost, Bow, Kananaskis, Elbow, Sheep and Highwood Rivers (Fig. 1). In addition to numerous smaller, permanent streams there are many intermittent watercourses. The main lakes in the area have been either created or enlarged by man for hydroelectric power production purposes (Spray and Kananaskis Lakes and Barrier and Ghost Reservoirs).

#### 4.4 Geology and Geomorphology

The mountains and foothills of Southwestern Alberta form part of a huge anticline whose apex lies at the Alberta-British Columbia border. The rocks of the mountains are mainly Palaeozoic limestones, dolomites and quartzites. Rocks of the lower foothills consist of Mesozoic shales, sandstones and conglomerates. Strata is progressively older westward. Differential erosion has helped to produce the series of parallel and sub-parallel northwest-southeast trending fault ridges noted above.

Glacial and glacio-fluvial activity has contributed many features familiarly associated with the presence of ice and water. U-shaped valleys, drift deposits which now form valley terraces, moraines, kames and outwash plains are to be found in the area.

Geological strata such as the Kootenay formation of the Upper Cretaceous and unconsolidated deposits of sands and gravels have made possible some of the industrial activities described below.

#### 4.5 Climate

Alberta's climate is on the whole continental. Cold winters and short, cool summers generally prevail. Latitude, altitude and location are important influences upon the climate of the area. There are considerable variations in climate from district to district, as well

as in the weather from year to year.

At the Kananaskis Forest Experiment Station the mean maximum temperature for July, the warmest month, is 55.7°F. The mean January temperature is 16.7°F. and the annual total precipitation is 23.45". On higher valley slopes in the Marmot Creek Experimental Watershed temperatures range as low as -45°F. and as high as 86°F. Precipitation totals about 45".

Climatic factors influence many aspects of land use. For instance low water temperatures, low overnight summer temperatures, the impact of warming Chinook winds on ski slopes all suggest possible climatic restrictions on the location and scale of certain recreational activities.

#### 4.6 Soils

Soils throughout the area are complex. They vary particularly from the higher elevations and intermountain valleys in the west to the rounded foothills in the east. Six descriptive terms have been applied by the Eastern Rockies Forest Conservation Board for management purposes: bare rock and rocky alpine; residual; colluvial; glacial; alluvial and glacio-fluvial; and bog and marsh. Podzolic soils are found on many of the lower elevations. They have developed under forest cover where leaf litter accumulates on the surface.

While in general the soils are well drained and erosion resistant, certain land uses have contributed to increased instability. Overgrazing is one cause, leading also to diminished range carrying capacity. Poor road and seismic line construction produces heavy gullying and stream siltation. In turn aquatic environments have been disturbed and some fish populations have reportedly declined.

#### 4.7 Vegetation

The area lies in a transition zone between the parkland vegetation of the Prairies and the alpine vegetation of the Front Ranges. Rough fescue grass dominates the lower foothills. In the higher foothills there is a forest of climax white and black spruce with successional lodgepole pine, aspen and balsam poplar and black cottonwood. River valley bottoms support mixed stands of poplar, white spruce, Douglas fir, lodgepole pine, limber pine, willow and white birch.

The alpine forest cover of the highest mountain elevations is made up primarily of conifers which sweep up from the lower slopes to timberline at about 6,500 feet. As elevation increases so does alpine fir tend to mix more and more with Engelmann spruce and lodgepole pine. Towards timberline whitebark pine and alpine larch become evident.

All of the Eastern Slopes have had an extensive fire his-

tory, in large measure contributing to today's dominant, fire-following sub-climax lodgepole pine forest. Since about 1910, protection of forest cover has been one of the principal land management objectives of respective administrative agencies.

#### 4.8 Fish

Fish populations are found in all of the rivers of the area as well as in several of the smaller streams, natural lakes, beaver dams and the reservoirs. Game fish which occur naturally or which have been stocked include rainbow trout, eastern brook trout, brown trout, Dolly Varden trout (bull trout), cutthroat trout, lake trout and Rocky Mountain whitefish (grayling).

Non-game fish which are common include suckers and ling (burbot). Warm-water game fish are absent. Low water temperatures inhibit their production and upstream movement is denied by man-made dams.

#### 4.9 Wildlife

Three faunal zones may be found in the area. The Alpine zone is restricted to the treeless, relatively barren lands of the Front Ranges which lie above timberline. Bighorn sheep and mountain goat are most prominent amongst the larger mammals although an occasional grizzly bear or wolverine may also be present. Chipmunks, pikas and marmots frequent rockslides.



The Hudsonian-Canadian (subalpine) zone is transitional, lying between the stunted alpine fir and larch growth near timberline and the biologically rich Canadian zone with which it merges on the eastern margins of the area. Because boundaries between these two zones are flexible, several wildlife species common to both are distributed over much of the area.

Big game includes whitetail and mule deer, elk and moose, black and grizzly bear and bighorn sheep. Some wolves may be present. Fur bearers such as beaver and marten are present and smaller species include chipmunks, voles and shrews. A band of feral (wild) horses ranges over parts of the Sheep and Elbow River drainages.

The number and condition of winter ranges are crucial to the maintenance of wildlife populations. Several such ranges exist. Bighorn sheep ranges lie adjacent to Banff National Park north of the Canmore Corridor and in several locations south of the Bow River. Portions of the Ghost, Elbow and other river valleys opening to the east are important winter ranges for elk and mule and whitetail deer.

## 5. ADMINISTRATION AND LAND USE

In this section the principal administrative categories of lands in the area are described. The disposition of land

is outlined. An account of past and present uses is provided. Then some landscape changes wrought by these land uses are discussed.

Since the onset of permanent white settlement in southwestern Alberta in the late nineteenth century the Eastern Slopes have had a history of multiple land use. That is, the natural resources of the region have been managed by different agencies so as to permit mining, lumbering, grazing, watershed conservation and other types of land use at the same time. Priorities for land use have been ascribed in most instances. Occasionally considerable landscape change has resulted from the extraction of both renewable and non-renewable resources.

#### 5.1 Administration

The first major administrative unit to include part of the area was Banff National Park. In 1902 the existing park boundary was expanded to include the Spray and Kananaskis Valleys, the Canmore Corridor and other lands (Fig. 2). Further boundary revisions were made in 1911, 1917, 1930 and 1949.

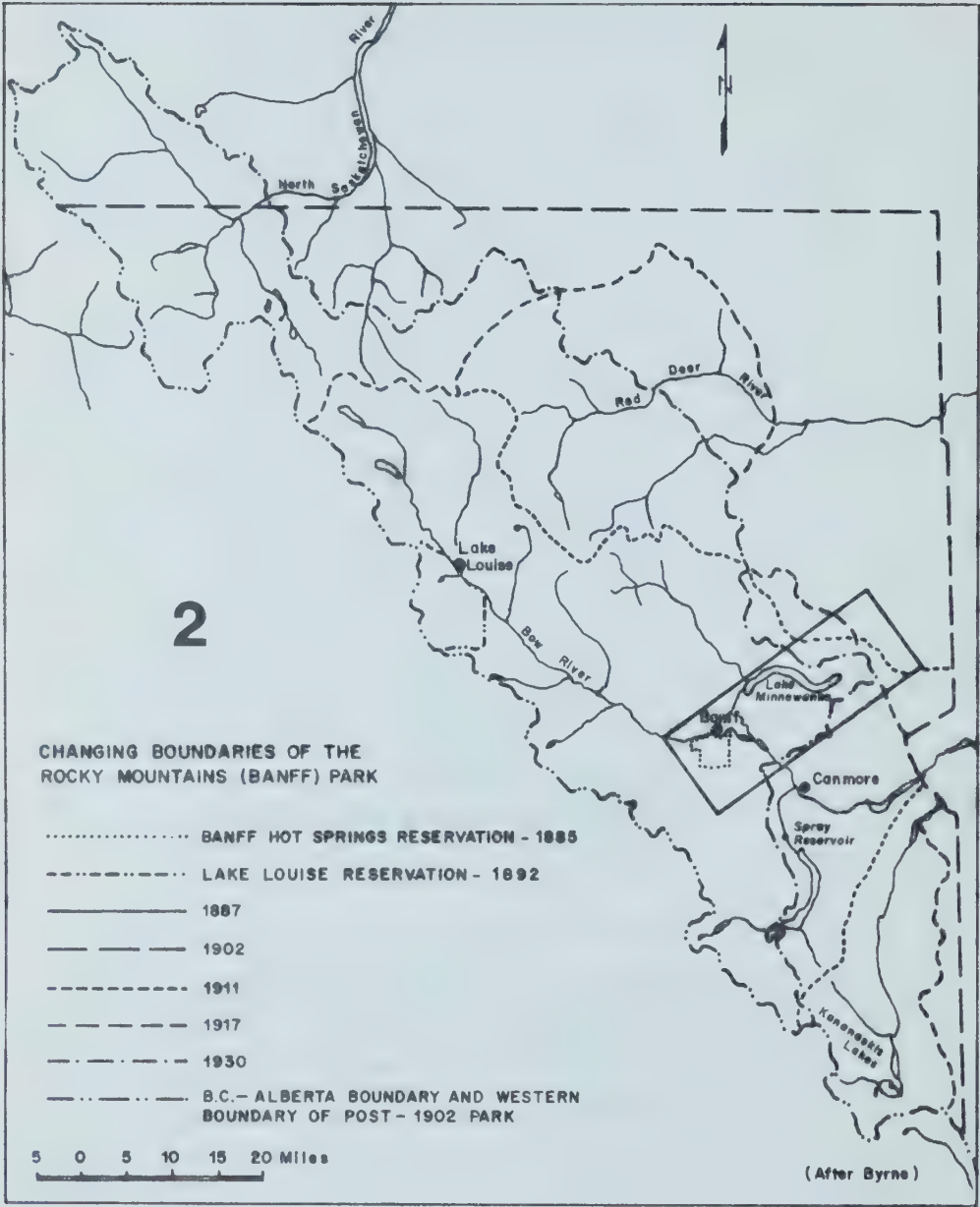
The park was enlarged mainly for the purposes of recreation and game protection, but national park status did not prohibit land uses such as lumbering and mining until the National Parks Act was passed in 1930. At that time the

park boundary was withdrawn westward and excluded areas of industrial activity in the Canmore Corridor.

The Spray and Kananaskis Valleys, the Canmore Corridor and its surrounding mountains continued to be a game reserve administered by the Government of Alberta. This status was withdrawn in 1956.

Perhaps the single most significant development in the land use history of the Eastern Slopes was the establishment in 1910 of the Rocky Mountains Forest Reserve by the Dominion Government. Rapid settlement of the relatively dry, treeless Prairies in the two decades following the completion of the C.P.R. in 1885 produced a need for both timber supplies and irrigation waters. Although the Department of the Interior had recognized the need for conservation on non-agricultural public lands, extraction of timber from the Bow, Spray, Kananaskis and other valleys was careless, wasteful and the cause of many major fires. Watershed stability and the equable flow of water for irrigation and other purposes was threatened.

Eventually the Forest Reserve was established "for the maintenance, protection and reproduction of the timber... the conservation of the minerals and the protection of the animals, birds and fish therein, and for the maintenance of conditions favourable to a continuous water



supply...<sup>1</sup> Mining, grazing and recreation were among the uses permitted. The reserve was administered by the Dominion Forestry Branch.

With the transfer of natural resources to Alberta in 1930 the Forest Reserve became a provincial responsibility. The area was administered by the Department of Lands and Mines. The purposes of the reserve, however, remained identical to those formulated by the Dominion Government.

In 1947 the Eastern Rockies Forest Conservation Board was created. Officials were drawn from the Governments of Canada and Alberta. The purposes of the Board were:-

- i) to construct, operate and maintain and to supervise the construction, operation and maintenance of projects and facilities required for the conservation of the forests and the protection of the watersheds in an area<sup>2</sup> forming part of the Rocky Mountains Forest Reserve;
- ii) to protect the forests in the Area from fire, insects, disease and other damage; and
- iii) to conserve, develop, maintain and manage the forests in the Area with a view to obtaining the greatest possible flow of water in the Saskatchewan River and its tributaries.<sup>3</sup>

The Board has "adhered to the principle that watershed

<sup>1</sup>Canada. Statutes. 1911. An Act respecting Forest Reserves and Parks. 1-2 George V, Chap. 10.

<sup>2</sup>The Conservation Area contains about 9,000 square miles on the Eastern Slopes bounded by Waterton, Banff and Jasper National Parks and by the Brazeau-Athabasca divide.

<sup>3</sup>Eastern Rockies Forest Conservation Board, 1972. Annual Report.

protection and improvement may be attained along with the utilization of the other resources, hence a policy of managing the Conservation Area on a multiple-use basis has been accepted".<sup>1</sup> In 1964 the Board stated as part of its policy that it would not promote or encourage recreational use of the Conservation Area and that such use would be restricted in large sections of the reserve.<sup>2</sup>

Administration and operation of the Board's program has been the responsibility of the Alberta Forest Service. The Board is to be disbanded this year.

## 5.2 Land Disposition

There are three principal types of land holdings in the area. These are unencumbered public land, public land held under a system of leases and permits and private land. Leases and permits have been issued for a variety of purposes including coal, petroleum and natural gas exploration and extraction, quarrying, grazing and timber cutting, recreation and miscellaneous residential, hydro-electric and communications activities.

<sup>1</sup>Idio.

<sup>2</sup>Eastern Rockies Forest Conservation Board, 1964. "Recreation. General Policy Statement". (mimeographed).



Leases may contain renewal clauses. They are sometimes long-term and they may apply either to the surface or subsurface resources. Some leases have been issued quite recently; for example, that issued to the Alpine Club of Canada for a clubhouse in the Canmore Corridor. Other arrangements date back to the first years of this century, such as some coal and grazing leases and permits.

Land disposition is at its most complex in the Canmore Corridor (Fig. 3). Permanent communities, such as Harvie Heights, Canmore, Exshaw, Kananaskis and Seebe as well as a scattering of service centres, add to the distinctiveness of land dispositions there.

This pattern of land ownership could change significantly over a short time period. Decisions on several applications for development have been tabled by the Calgary Regional Planning Commission pending the outcome of public hearings. If approved, these applications would require changes in the existing legal status of the lands involved.

### 5.3 Watershed Conservation

As noted above, this is the principal objective of land use management. Although only about 12% of the Saskatchewan River basin lies in the mountains, about 87% of the total annual flow comes from the Eastern Slopes and the national parks.

#### 5.4 Coal Mining

Coal seams were discovered in the Kootenay formation of the Cascade Coal Area in 1883. Canmore was established as a coal mining town and by 1914 an area from Lake Minnewanka to Evans-Thomas Creek had been patented or reserved for coal mining purposes. Intermittent mining occurred at other sites (e.g. Ribbon Creek, 1947-52), but the Canmore Corridor has remained the focus of this land use.

Most of the private land on the south side of the Canmore Corridor (i.e. about 5725 acres) is owned by Canmore Mines Ltd. which also leases an additional 2850 acres. Underground mining has been the usual method of coal extraction, but in the Corridor and elsewhere there have been some experiments with surface stripping.

The present disposition of coal leases and coal exploration reservations is shown in Figure 4.

#### 5.5 Timber Cutting

This part of the Eastern Slopes is not recognized as an abundant source of merchantable<sup>1</sup> timber. The Alberta Forest Service reports that 58% of the merchantable timber in the Eastern Slopes is composed of lodgepole pine. Parts of the area are designated as "protection forest"

<sup>1</sup>"Merchantable" is defined as trees with diameters greater than 4".



### 3

CANMORE COMMOR  
LAND DISPOSITION

#### LEGEND

- forest reserve boundary
- public land with leases (miscellaneous grazing, mining, etc.)
- public land unencumbered
- private land

because of their importance to watershed stability and are unavailable for timber cutting.

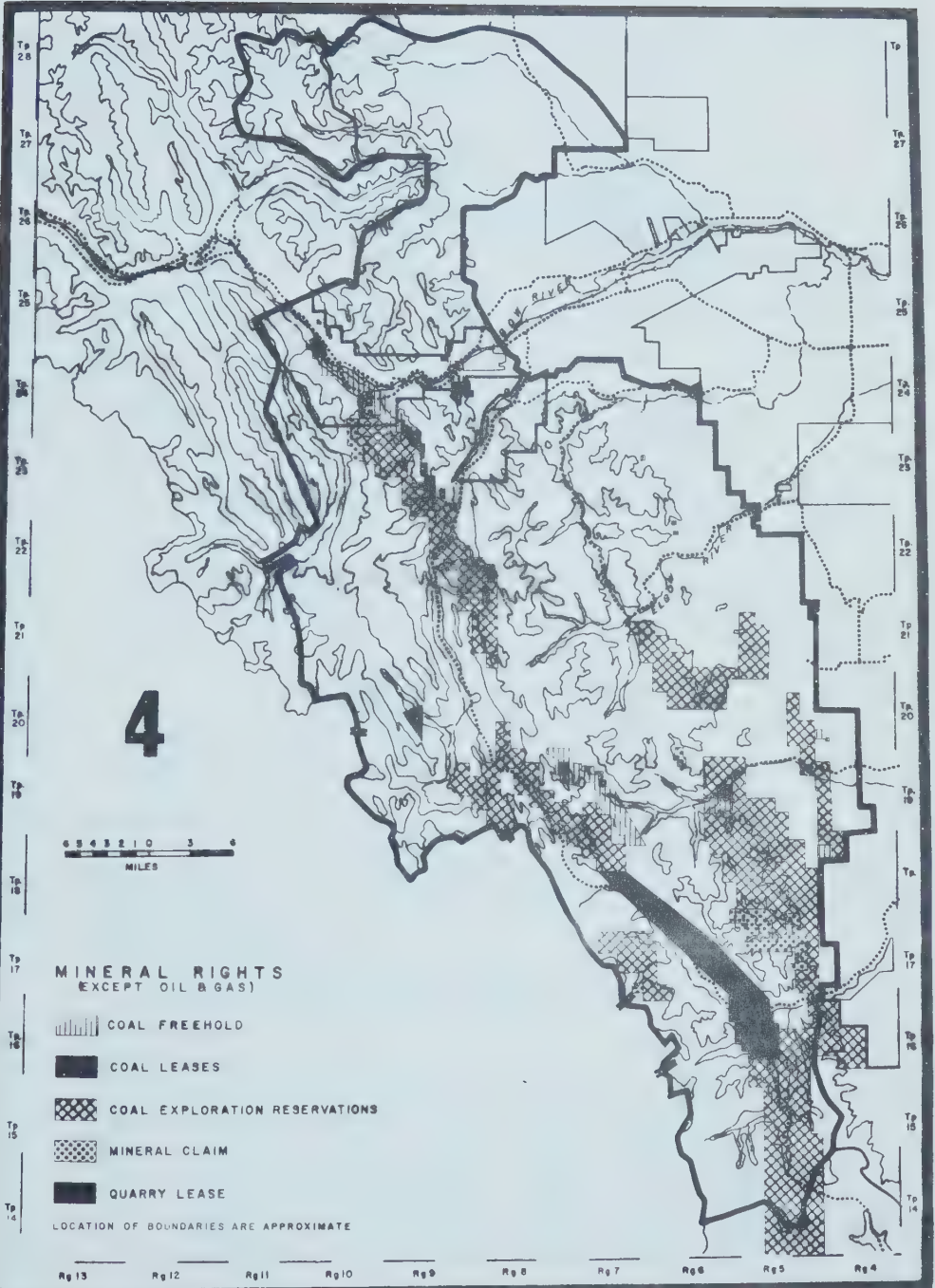
The forest resource has been used constantly by individual permittees for the production of poles, posts and saw timber. Commercial activities are today confined to two principal districts (Fig. 5).

Timber cutting rights were first sold in the 1880's. From then until 1966 the principal method of timber disposal was to sell timber licences to the highest bidder. Current timber dispositions are made in the form of quotas and annual cuts within management units administered by the Alberta Forest Service.<sup>1</sup> The object aimed at is sustained yield forestry.

#### 5.6 Grazing

Domestic stock grazing has been a traditional use in the foothills. Today the only areas closed to grazing include the Fairholme Range and the Spray-Kananaskis drainage district. The Bow River Forest is divided into grazing allotments for management purposes. These allotments, their acreages and carrying capacities are shown in Figure 5.

<sup>1</sup>Alberta Forest Service, 1972. The Quota System of Timber Disposal.



### 5.7 Quarrying

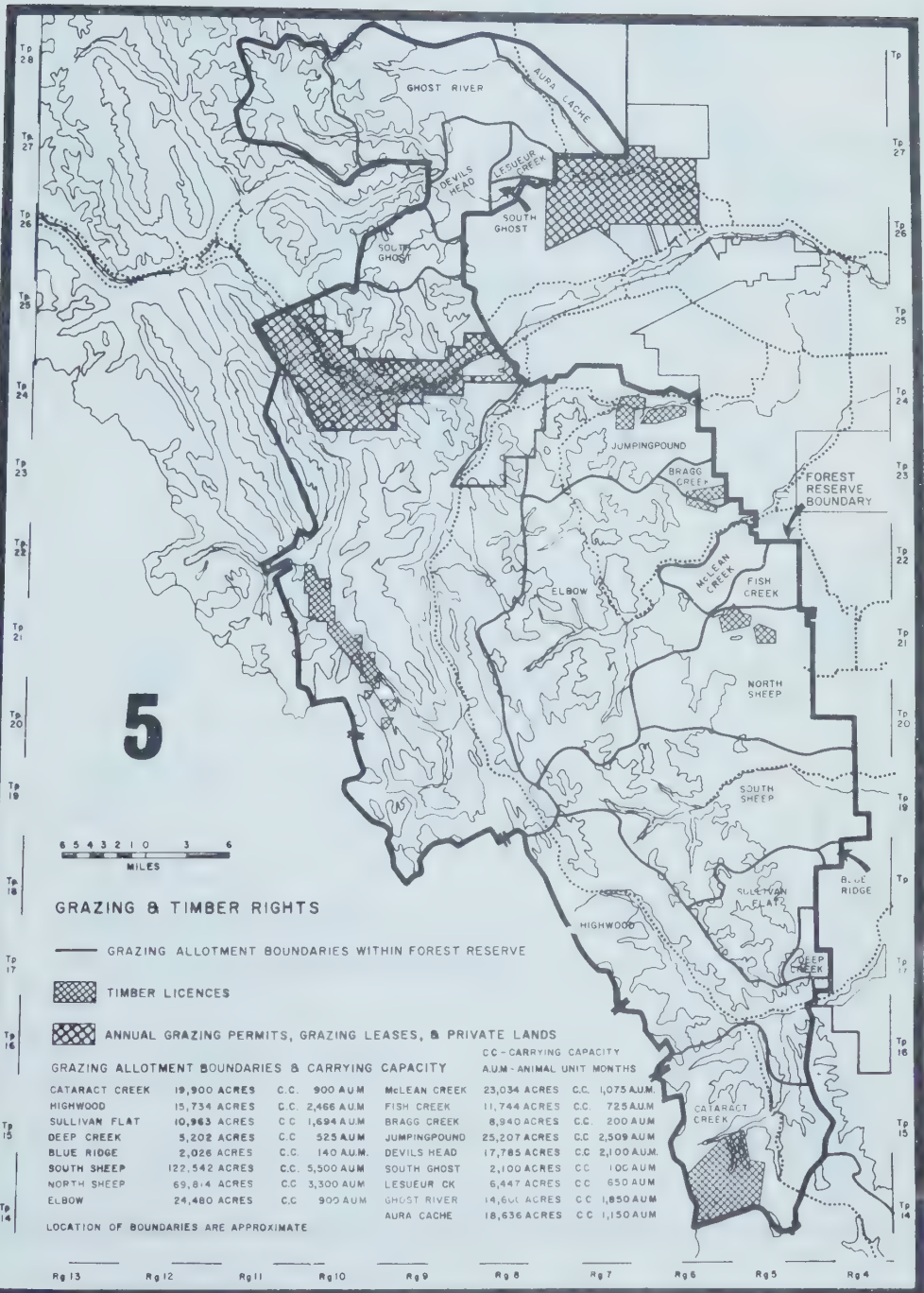
The following are a few examples of non-metallic mineral extraction in the area. Limestone from Exshaw has been quarried for over 60 years for the manufacture of Portland cement. At a plant at Kananaskis, Cambrian limestone is quarried for the manufacture of lime and crushed stone products. Hard black shale from the Wapiabi formation is quarried at Seebe.

There are extensive reserves of sand and gravel throughout the area. Gravel pits have been opened in the Canmore Corridor and along the routes of highways for the purposes of railway ballast, road construction and so on. Possibly still more sites may be opened with expanded road building. Also, Parks Canada may pursue a policy which precludes further extraction of sands and gravels from locations inside national parks.

### 5.8 Oil and Gas

Portions of the area have been leased or reserved for the purposes of geophysical exploration and oil and gas development. However, the principal fields identified by Alberta's Energy Resources Conservation Board are peripheral to the area (Fig. 6). During the fiscal year 1971-72, 12 wells were drilled in the Bow River Forest. Twelve wells were drilled and nine were abandoned.







### 5.9 Scientific Research

Some public lands have been allocated to scientific research. Since 1934, 494 acres of the lower Kananaskis Valley have been used as a silvicultural experiment station by the Canadian Forestry Service. Part of this area is also used by the University of Calgary for its Environmental Sciences Centre. The Marmot Creek Experimental Watershed was set aside in 1962 as a cooperative watershed research area involving 13 federal and provincial agencies and the Universities of Alberta and Calgary.

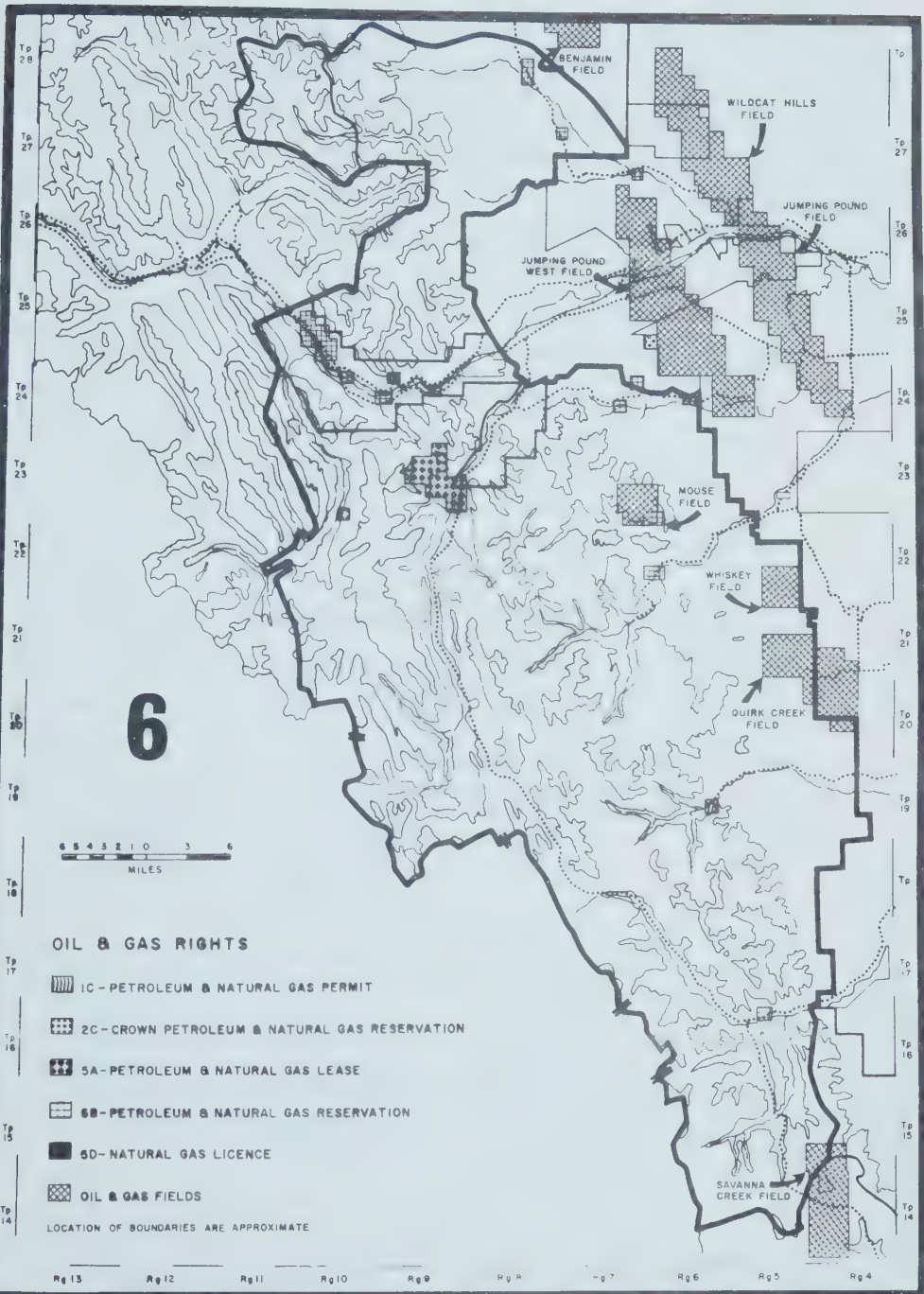
### 5.10 Recreation

Recreational land uses may be divided into two categories: those which require some form of facility development and

#### i) Facilities-Oriented Recreation

There are six summer cottage developments (Fig. 7). Benchlands, Ghost and Waiparous were developed in the 1930's and 1940's and extended in the early 1960's. During the 1950's and 1960's new subdivisions were opened at Harvie Heights, Kananaskis Lakes and Lac des Arcs. The cottage subdivisions are on both public and private land.

The provincial government has located picnic sites and campgrounds along the main routes in



the area and on roads which lead into the foothills. Two sites are located in provincial parks. Most of the facilities are in proximity to water surfaces.

Private recreational facilities are available in the Canmore Corridor and in the Kananaskis Valley in the form of ski hills and dude ranches. Additional recreational facilities are being made available on the Stony Indian Reserve.

The area is popular with institutional groups from Calgary. The Youth Hostel at Ribbon Creek is one such example.

ii) Non-Facilities-Oriented Recreation

There are several recreational activities which do not require the provision of facilities other than access roads and trails. These include recreational driving, cross-country skiing, snowshoeing, snowmobiling, hiking and backpacking, boating, hunting and fishing. All are undertaken to some degree in the area.

Restrictions have been imposed upon the types of activities which may be carried on in some areas. For example, hunting and fishing is not permitted in the Ghost River Wilderness Area.

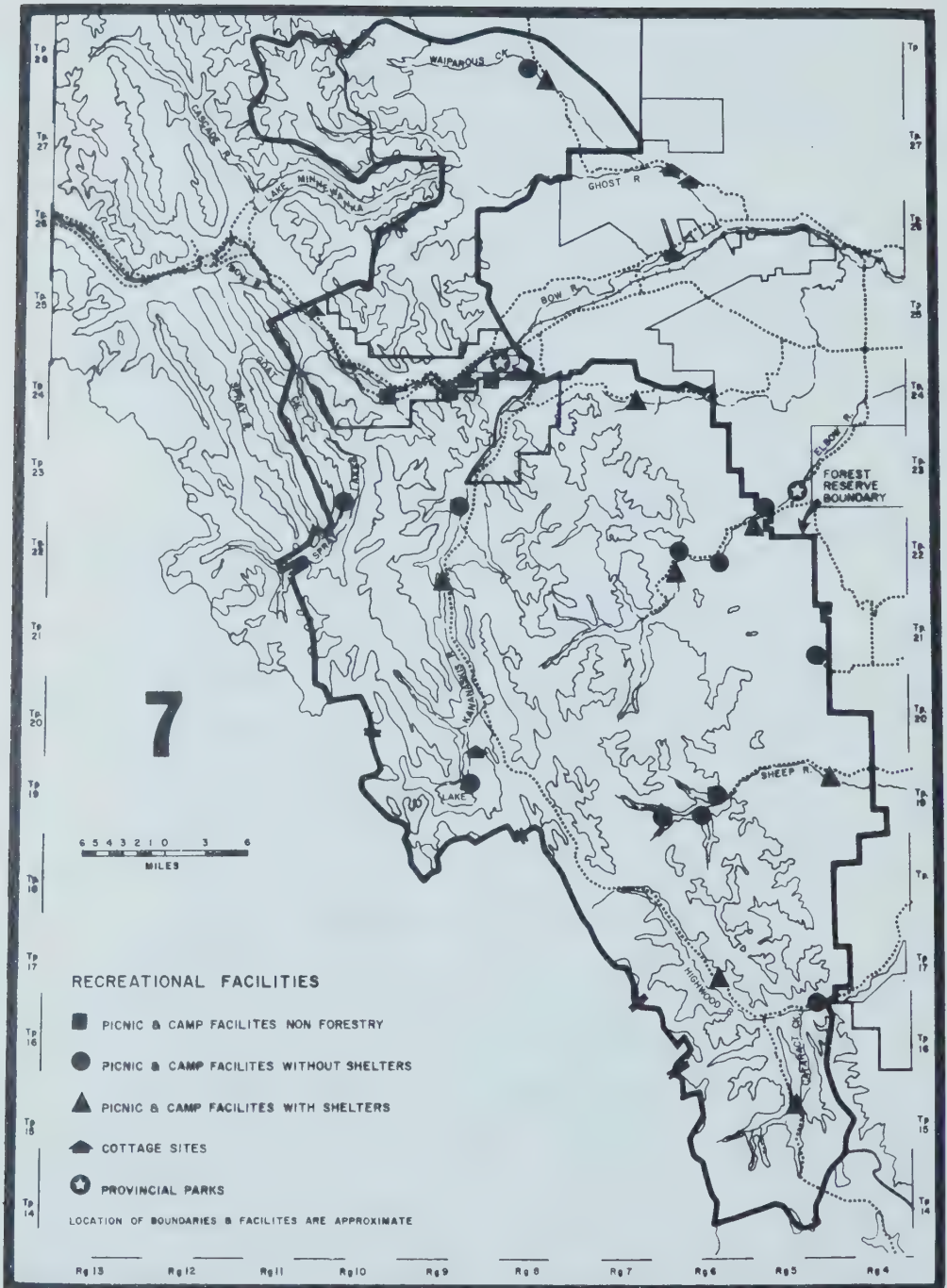
Elsewhere, several species are hunted. The area lies mainly in three game zones. B.G. 7 lies north of the Fairholme Range and the Indian Reserve. B.G. 8 which is exclusively a bow and arrow zone, includes the Canmore Corridor. B.G. 9 makes up the balance of the area lying south of the Bow River Valley.

In 1972 provincial game regulations permitted the hunting of male and/or female whitetail and mule deer, moose and elk, bighorn sheep, black and grizzly bears in these zones.

As indicated before, there are several game fish present. While there is general public access to most waters in the public lands in the area, in the case of the Bow River a definite access problem exists. 49.5 miles, of a total of 71 miles of the Bow River between Calgary and Banff National Park, lie on private lands or Indian Reserve.

#### 5.11 Hydroelectric Power Production

Calgary Power Ltd. began providing hydroelectricity in 1911. Since then the company's activities have encompassed developments at Spray Lakes, Kananaskis Lakes, the Canmore Corridor and at various sites along the Bow and Kananaskis Rivers.



### 5.12 Other Uses

Additional uses which must be considered in planning include permanent residential developments, notably the communities in the Canmore Corridor, and transportation routes.

### 5.13 Landscape Change

The location and scale of some land uses may bring about changes in landscapes and ecosystems both inside and outside the area. A recent example showed parts of Banff National Park to be open to accidental flooding from the Spray Lakes Reservoir.

Occasionally changes can be predicted as in the case of fish productivity in artificial reservoirs.<sup>1</sup> Other changes may result from inadequate knowledge of the consequences of some land uses on other components of the landscape, or simply from poor management practices.

Because fire protection has been so stringent in recent decades no major fires have occurred in the area since the 1930's. While this control satisfies the objectives of watershed conservation it has also encouraged the expansion of coniferous forest into open grassland and aspen stands. The carrying capacity of the forest for

<sup>1</sup>D. McDonald, 1972. "Recreational Potential of the Bow River Valley". (mimeographed).



big game has been reduced.

Industrial activities such as mining, quarrying and lumbering have brought changes in the landscape, particularly in the Canmore Corridor where the mix of land uses is largely confined to the valley floor.

Specific examples of problems associated with multiple land use have been documented in the Conservation Guides prepared for each of the principal drainage basins by the Eastern Rockies Forest Conservation Board.

## 6. EVALUATION OF RESOURCE POTENTIAL

Until the 1960's no comprehensive evaluation of resource potential had been undertaken for the Eastern Slopes. Now a research group whose members are drawn from provincial government agencies is preparing the Foothills Resource Allocation Study. The most significant purpose of this Study is said to be "to provide the Government of Alberta with a design for the most beneficial allocation of resources in the Foothills Region".<sup>1</sup>

For the purpose of the Study the Foothills Region has been subdivided into planning units called Drainage Districts. In the first phase of the Study there is an

<sup>1</sup>Alberta, Dept. of Lands and Forests, 1972. "Kananaskis-Spray Drainage District, Phase 1, Preliminary Analysis".

assessment of the resource potential and a compilation of current land uses.

Five maps are being prepared by the Study group for each drainage district. The researchers suggest that by showing only resource potential this part of the Study will provide some idea as to how "alternative developments may proceed while ensuring a suitable utilization of available physical resources".<sup>1</sup>

The first map shows preferred renewable natural resources as established by the Canada Land Inventory. Additional information is provided on secondary resources, resource compatibility and the quality of the resources.

The second map includes preferred non-renewable resources as well as forest cover, hydrology, grazing capability, archaeology and key ungulates (Fig. 8). The third map shows present land use. The fourth map shows resource allocation according to potential, use and compatibility. The final map is a recommended management zone map based upon a five-zone system (Table 1). At this time only the preliminary map for the Kananaskis-Spray district is available (Fig. 9).

<sup>1</sup> Ibid.

There are three subsequent phases to the Study. Phase II defines and measures the general economic capability of the foothills region. Phase III projects what levels of demand will be placed on the foothills resources during the coming decade. The final phase consists of an interdisciplinary analysis of resource development alternatives.

The ultimate goal of the Study "is a regional land use plan determined by resource potential, supply-demand analysis and resource development alternatives subject to revisions in present land commitments and policy".<sup>1</sup>

The Foothills Resource Allocation Study is important in two senses. First, it represents the only attempt to evaluate all recognized renewable and non-renewable natural resources from the standpoint of long-term planning. Secondly, in whatever form its final recommendations are shaped, these may have a significant influence on government policy and planning. Public evaluation of the criteria used in the Study and of the results obtained is therefore of considerable importance.

Individuals, private interests and citizens organizations are also providing recommendations on the management and

<sup>1</sup> Ibid.

use of select resources or of specific geographical areas. Recent examples include briefs submitted to public hearings on coal strip mining and recommendations for a recreational wilderness in the Elbow-Sheep district.

Some degree of public dissatisfaction with the standards established for an improved section of the Kananaskis Highway represents another type of evaluation of ongoing developments.

TABLE 1

PRELIMINARY LAND USE PLAN (F.R.A.S.)

I. Land Use Zones

1. Special Use

- a. Indian Reservation
- b. Metis Colony
- c. Wilderness Area
- d. Natural Area
- e. Research Area
- f. Other Special Areas
- g. Freehold Land
- h. Transportation Corridor
  - i. Major
  - ii. Minor

2. Development Node

- a. Urban Development
- b. Residential
- c. Commercial
- d. Institutional
- e. Industrial

II. Resource Management Zones

3. Conservation Zones

- a. Archaeological Zone
- b. Watershed Management Zone
- c. Big Game Management Zone
- d. Waterfowl Management Zone
- e. Recreation Management Zone

4. Subsurface Resource Zone

- a. Coal Management Zone
- b. Oil and Gas Management Zone
- c. Metallic Mineral Management Zone
- d. Industrial Mineral Management Zone

5. Surface Resource Zone

- a. Recreational Development Zone
- b. Timber Development Zone
- c. Agriculture Development Zone
- d. Forage Development Zone

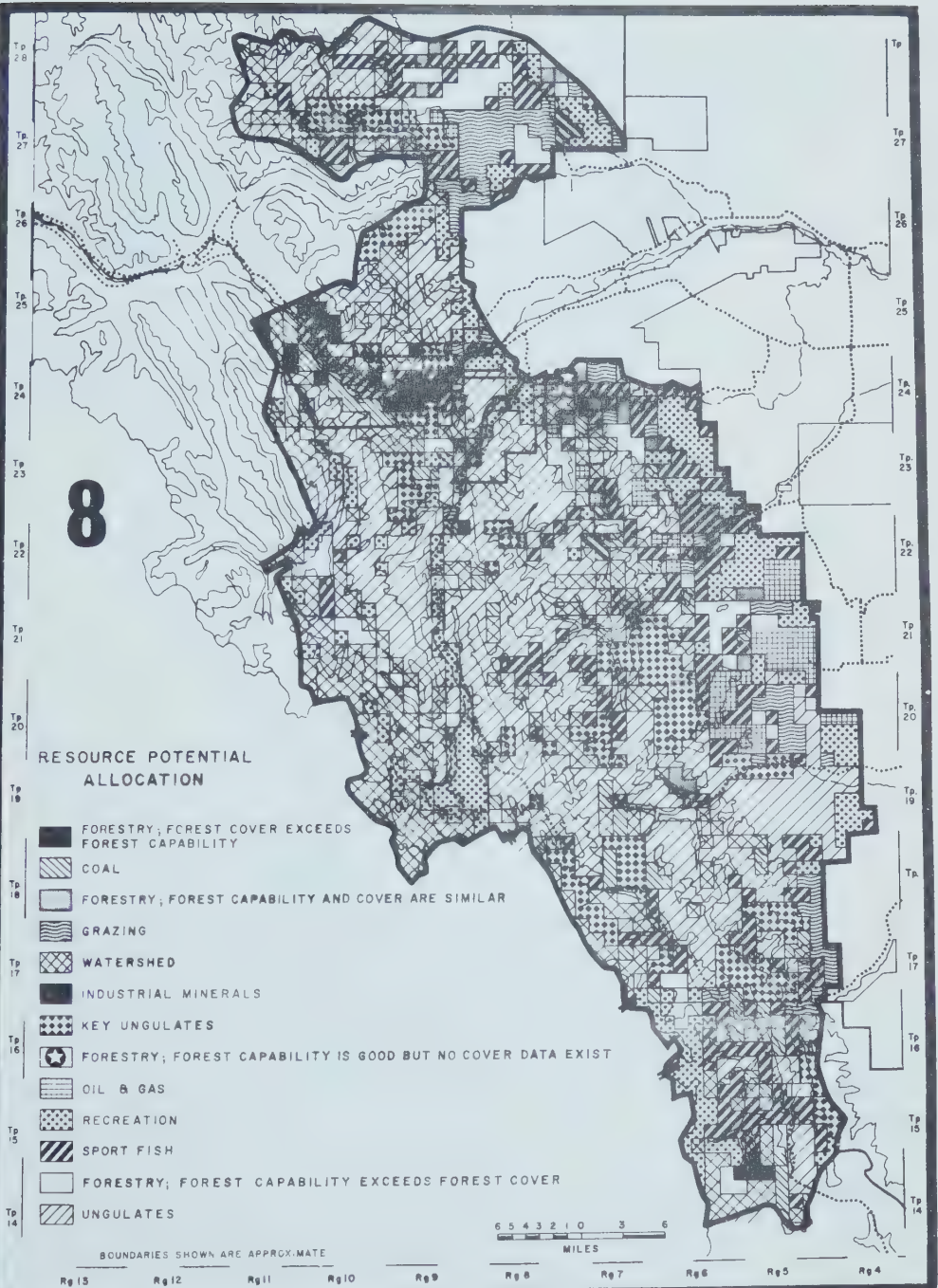


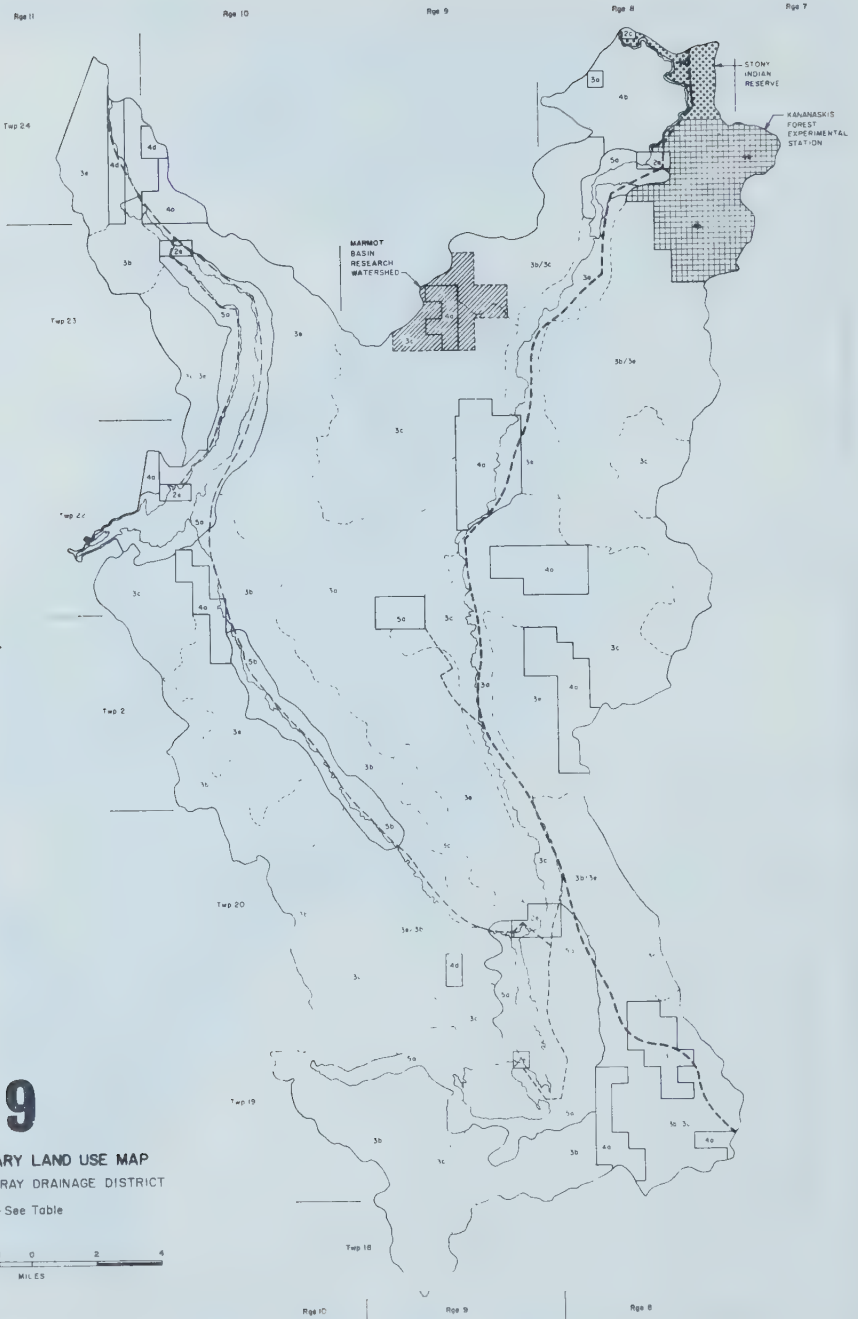
## 7. PLANNING FOR THE FUTURE

Decisions respecting future land use and resource development in the Bow River Watershed basin are being made at a time of considerable social change in Canada. As has happened elsewhere in North America the population of Alberta has become highly urbanized. By 1981 the Province and the City of Calgary may have over two million and half a million residents respectively. Most of Alberta's major cities lie relatively close to the foothills and Rocky Mountains and look to these regions for a variety of recreational activities.

While national parks absorb much of this recreational use, their very popularity for this purpose threatens the natural character of wildland landscapes and ecosystems. Limits on both the type of recreation and number of recreationists can be anticipated.

The foothills region and the Front Ranges with their varied scenery and numerous opportunities for both facilities and non-facilities-oriented recreation provide a major potential for future outdoor recreation. In the case of the study area, it lies in Calgary's day-use recreational zone. A belt of private lands and limited public recreation facilities closer to the city emphasizes the area's importance for recreation.





Recreation need not be incompatible with other land uses in the area. However, the social and economic benefits and costs of all types of resource development must be examined. For instance, to what extent are some present land uses being subsidized by existing practices and fee structures?

A series of questions may be posed concerning future land use and resource development policy in the Bow River Watershed basin.

1. What should be the guiding principles in planning future land use and landscape in the area?
2. What criteria should be selected in stating preferences between uses? Should the area continue to be planned and managed on a multiple-use basis?
3. What aspects of research (ecological, archaeological, economic, etc.) are most urgently required in the area prior to the preparation of long-range plans?
4. What techniques of analysis (e.g. benefit-cost) should be employed in assessing the respective values of different land uses and resources? Are present methods of analysis adequate? How effective is zoning to long-range planning?
5. How important, socially and economically, are the resources of this area when compared to similar resources elsewhere in Alberta and Canada? How significant are proposals for land use and resource development in Banff National Park, the Stony Indian Reserve, the City of Calgary and other nearby areas when planning the future use of the study area?
6. Is there a need for some type of regional plan which will enunciate long-range land use and management strategies for the Bow River Watershed basin? Should there be public hearings on such a plan?

7. What prospects exist for increasing the resource potential of the area by means such as the establishment of game reserves and fish ponds?
8. Which agencies should be responsible for the administration of land use and resource development? Is there a need for an independent review agency to monitor and evaluate land management in the Eastern Slopes?
9. What are the merits of establishing a permanent road system in the area?
10. What types of outdoor recreation should be permitted and encouraged?

The Canmore Corridor perhaps best exemplifies the many problems concerning land use planning. The Corridor has a mix of land uses. It has mineral, sand and gravel, forage and recreational resource potential. There is a mixture of private and public lands. There are plans to expand the industrial, commercial and residential facilities in the Corridor. The growth in popularity of Banff National Park has influenced land use development in the Canmore Corridor.

Given this existing pattern of land use, resource development and land disposition in the Corridor, what strategies would best suit its future development? If, for example, the parent company of Canmore Mines Ltd. decided to engage upon extensive recreational developments, what changes might this necessitate in provincial policy for land use in the Corridor? Should the Corridor develop a greater number of recreational service facilities and thus

alleviate development pressures in Banff National Park?

What would be the effects of changes in provincial land use policy in the Corridor upon the economy of Canmore and other communities? If land use zoning is introduced in the Canmore Corridor how many zones should there be?

Answers to these and other questions in the Canmore Corridor and elsewhere in the study area will help to determine which development strategies should be adopted.





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Alberta. Department of Lands and Forests. "Base Map Prepared for Alberta Forest Service." 1971 (1 inch = 16 miles)

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Alberta. Department of Lands and Forests. "Parks and Recreation Areas, Foothills Region." Alberta Forest Service. 1972 (1 inch = 19 miles)

Alberta. Department of Lands and Forests. "Province of Alberta." 1968 (1 inch = 16 miles)

Alberta. Department of Lands and Forests. "Bow River Forest, Rocky Mountain Forest Reserve." 1970 (1 inch = 3 miles) (Recommended.) (See also, companion maps for Clearwater and Crowsnest Forests.)

Canada. Department of Energy, Mines and Resources, Surveys and Mapping Branch. "Banff National Park." 1955 (1 inch = 3 miles)

| <u>Location</u> | <u>Name</u>         | <u>Scale</u> | <u>Year</u> |
|-----------------|---------------------|--------------|-------------|
| 82 - J          | Kananaskis Lakes    | 1/250,000    | 1966        |
| 82 - 0          | Calgary             |              | 1967        |
| 82 - J 1W       | Polliser-Kananaskis | 1/126,720    | 1963        |
| 82 - J 07E      | Mount Head          | 1/50,000     | 1954        |
| 82 - J 07W      | Mount Head          |              | 1961        |
| 82 - J 09       | Turner Valley       |              | 1955        |
| 82 - J 10E      | Dyson Creek         |              | 1943        |
| 82 - J 10W      | Mount Rae           |              | 1954        |
| 82 - J 11       | Kananaskis Lakes    |              | 1967        |
| 82 - J 12E      | Tangle Peak         |              | 1966        |
| 82 - J 12W      | Tangle Peak         |              | 1966        |
| 82 - J 13E      | Mount Assiniboine   | 1/50,000     | 1966        |
| 82 - J 13W      | Mount Assiniboine   |              | 1966        |
| 82 - J 14E      | Evans-Thomas Creek  |              | 1954        |
| 82 - J 14W      | Spray Lake          |              | 1966        |
| 82 - J 15E      | Bragg Creek         |              | 1940        |
| 82 - J 15W      | Moose Mountain      |              | 1940        |
| 82 - 0 02E      | Jumping Pound       |              | 1931        |
| 82 - 0 02W      | Morley              |              | 1939        |
| 82 - 0 03E      | Canmore             |              | 1959        |
| 82 - 0 03W      | Canmore             |              | 1959        |
| 82 - 0 04E      | Banff               |              | 1959        |
| 82 - 0 04W      | Banff               |              | 1959        |
| 82 - 0 06E      | Lake Minnewanka     |              | 1958        |
| 82 - 0 06W      | Lake Minnewanka     |              | 1958        |
| 82 - 0 07E      | Wildcat Hills       |              | 1960        |
| 82 - 0 07W      | Wildcat Hills       |              | 1960        |
| 82 - 0 11E      | Burnt Timber Creek  |              | 1963        |
| 82 - 0 11W      | Burnt Timber Creek  |              | 1963        |
| 82 - 0 12E      | Barrier Mountain    |              | 1960        |
| 82 - 0 12W      | Barrier Mountain    |              | 1960        |

\* For additional information on maps see the Branch's Catalogue of Published Maps, 1970. Ottawa.

## QUESTIONING BY THE AUTHORITY

MR. KINISKY:

How difficult is it for the planning commission to carry out its duties when it has virtually no control over the placement of provincial highways, major utility corridors and power transmission lines? Would it be easier if you did have a measure of control in this area?

MR. SMITH:

I don't think the matter of the commission having control is the point. You can't place all things under the control of the commission and I don't think that's its purpose. I think it's more important that effective consultation and coordination take place before these things are done.

There are public utility boards which are concerned with bringing together, assessing and appraising the facts behind a proposal to develop rights of way of one kind or another. Presumably if there were proper routines established for a wider input than they've had in the past, this process would be complicated but still adequate.

I don't think provincial highways have been too much of a problem to the commission in the past. The matters of economics, engineering feasibility and so on are so great that in very few cases would the commission recommend changes to what has been done. Looking at things in retrospect, the highway becomes a problem only after people come.

MR. DOWLING:

Could you give us a rough idea of what percentage of potential leases for coal, oil and gas development have been taken up at this time within your planning commission area?

MR. SMITH:

We have no knowledge whatever of the mineral leases. They are granted, the rights are used and perhaps abused, and the commission has no control over this.

I think one of the finest examples in recent years where this has produced a wrong is at Pigeon Mountain. I don't know whether many people here are acquainted with the falls at West Wind Creek on the south side of the Pigeon Mountain interchange. A quarry lease was awarded there with no prior knowledge by the Department of Lands and Forests, and the next thing we knew there was a right of entry notification board hearing. The right of entry was given, with no regard even to the requirements of the Department of Highways. Some rather - in view of what was being done - useless rundle stone that need not have been taken out was removed and that ruined a very beautiful small falls area. This again is a matter of coordination.

DR. TROST:

What is the view of the commission on the question of whether land-use guidelines should apply to all lands or only to Crown lands and the right of the province?

MR. SMITH:

To all lands. If the public is going to impose on itself certain land-use controls to meet certain objectives, there is no reason why privately owned land shouldn't have to meet the same objectives.

DR. TROST:

In developing land-use plans there is a role for the provincial government, district planning commissions and the municipal level. Do you feel that the right proportioning of responsibilities between those three levels now exists or are changes needed?

MR. SMITH:

I feel that more leadership must come from the provincial government. Otherwise you have seven regional planning commissions, each trying to batter its way through its own obstacles, and never really coming together. Many of the things they have to contend with are things which do require provincial guidelines. The commission's experience in the corridor has initiated several of the things that are being done and has of course had a great deal of cooperation from Department of Lands and Forests administrators and from Municipal Affairs administrators of the improvement district. But this has been done in isolation. We really have no idea what they do in Red Deer or the Oldman River area.

If you start to bring in the eastern slopes lands, which is quite a different kettle of fish because so far nobody has been allowed in there, you are introducing a tremendous area of publicly owned land for which the province is really responsible. If the province in its wisdom, and perhaps on your recommendation, determines that the corridor might be a zone of a particular nature within a recreational zone, how are you going to achieve this and maintain it?

If Canmore can get an industry that is going to produce a few jobs locally, are you going to say no because in 20 years this is going to turn the area into just another area? Do you limit it to the tourist industry? Do you do things to compensate for this by promoting the tourist industry? If you are going to promote tourism then in effect you are giving Canmore its industrial base. But these policies have to come from the province.

DR. TROST:

Now in a sense the definition of the Canmore Corridor and its delineation from the rest of the eastern slopes is a step towards zoning of a sort isn't it?

MR. SMITH:

Yes, but it was a step by default. The Canmore Corridor, as the commission has considered it, encompasses those lands which were designated white zone lands. So that boundary was set.

DR. TROST:

What do you consider the priority uses for the future in the Canmore Corridor?

MR. SMITH:

We have thousands of people with trailers, tents and so on looking for some place to go - not necessarily the park - and we

have to accommodate them. The natural tendency of these people is to stay fairly close to the main lines of travel, so the highway is dictating the course for us. Whether it's done with an eye to the future so that 50 years from now it will not simply be another overcrowded and commercialized area is the question.





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A BRIEF TO THE PUBLIC HEARINGS  
ON  
LAND USE AND RESOURCE DEVELOPMENT  
IN THE EASTERN SLOPES

PARKS CANADA, WESTERN REGION

JUNE 18, 1973

**National and Historic Parks Branch**  
**Direction des parcs nationaux et**  
**des lieux historiques**



CANADA

Presented By: R. Fodchuk

DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT  
MINISTÈRE DES AFFAIRES INDIENNES ET DU NORD CANADIEN

THE PARKS CANADA VIEWPOINT REGARDING RELATIONSHIPS WITH THE WESTERN ROCKY MOUNTAIN  
NATIONAL PARKS AND THE EASTERN ROCKIES FOOTHILLS

BRIEF TO THE PUBLIC HEARINGS ON LAND USE AND RESOURCE DEVELOPMENT IN THE  
EASTERN SLOPES

PARKS CANADA, WESTERN REGION

INTRODUCTION

Mr. Chairman, Ladies and Gentlemen, my name is Roman Podchuk and I am Assistant Director, Western Region, Parks Canada. Parks Canada is responsible for the management of Canada's National Parks. Banff, Jasper and Waterton Lakes Parks are situated on the western edge of the Eastern Rockies Foothills, which are the subject of these Hearings.

May I, on behalf of the Honourable Jean Chrétien, Minister of Indian and Northern Affairs, express the appreciation of the Department for this opportunity to present the viewpoint of Parks Canada. The agency I represent has no direct involvement in the land area of the Eastern Slopes apart from the 9700-acre Ya-Ha Tinda Ranch, which lies just east of Banff National Park along the Red Deer River drainage. We do, however, recognize the direct relationship and impact of the National Parks upon the statements of objectives and development

strategies which undoubtedly will evolve from these hearings.

It is my objective today to outline the policies and considerations applicable to the National Parks lands in an effort to assist the Province of Alberta in formulating recreational and conservation policies for the Eastern Slopes area.

The three broad topic areas I would like to discuss are as follows:

1. Resource and Recreation Relationships
2. Wildlands and Wildlife Management
3. Natural Resource-based Industries.

#### 1. Resource and Recreation Relationships

A growing awareness of the values of nature and the need for conservation, together with an equally growing demand for outdoor recreational opportunities have combined to place a heavy burden on the National Parks in Canada.

Representing a little over one per cent of the Canadian landscape, it is not possible for National Parks to satisfy all the recreational demands made by different interest groups. These demands must be met to varying degrees

through a system of many different categories of complementary parks, open space and recreation areas, both public and private, including provincial and regional parks systems serving the large metropolitan centres.

In this hierarchy of parks and open spaces, the National Parks have as their primary role the preservation of outstanding geographical, geological, biological or historical features for the benefit of people. Section 4 of the National Parks Act of 1930 is frequently quoted as the foundation of the natural area park concept. It states that the National Parks are hereby dedicated to the people of Canada for their benefit, education and enjoyment and the National Parks shall be maintained and made use of so as to leave them unimpaired for the enjoyment of future generations.

One of the most difficult questions being asked of our park planning and research staff today is - "What environmental or social criteria can be used to determine how many people can use a given ecosystem or natural area before the quality of the user's experience or the health of the ecosystem begins to erode?". The best answer is being sought by many parks agencies but, to date,

neither we nor the others have any practical formula. Some answer is emerging but it appears that much more work must be done before a basis for reliable measurement is available.

This does not eliminate the need to establish a limit right now on the numbers of visitors permitted upon certain fragile areas, such as the alpine meadows within our mountain parks. We employ the professional judgement of parks staffs, and advice from the Canadian Wildlife Service and the universities. Within the limits imposed by the state of the art, maximum visitor loads or carrying capacities for various areas within the parks are being worked out by professional resource managers with the advice of resource scientists. Resource inventories, carrying capacity and use impact studies provide the essential data for the analysis and evaluation of alternatives and priorities in planning and operational policy development.

We are also looking for ways to provide the increasing number of parks visitors with an opportunity to enjoy the parks and their facilities. We must, for example, communicate to the potential park visitor that, while parks may be

overcrowded in mid-July, there is a great deal of elbow room and accommodation in most park areas during June, September and other months of the year.

In earlier days, when the National Parks represented the only major park system in western Canada and visitors were few, the development of tourist and recreation facilities was a major consideration of parks policy. In recent years, with the change in values of Canadian society and the rapid growth in visitors, a number of these earlier developments and policies projected into the future are clearly incompatible with the preservation part of the National Parks mandate. The problem for National Parks lies in striking a balance between the conflicting demands which require admission of more and more people together with ever higher expectations for services of all kinds while, at the same time, preserving the parks as havens of unspoiled landscape and wildlife for present and future Canadians. This balance must be reassessed from time to time to reflect contemporary needs and this was a main purpose of the public hearings on the National Parks Provisional Master Plans. It became quite evident to the public during those hearings that the National Parks could not become "all things to all people" and we have been re-evaluating the way we will go about meeting

objectives outlined by the National Parks Act and Policy. The importance of the "preservation" aspect of the National Park mandate has become increasingly evident through these public forums and the concern they have shown for the consequences of man's demands on the environment.

During the hearings, Parks Canada was looking for public assistance in defining acceptable courses of action. The additional opportunity which the Province of Alberta is providing through the process of these hearings is applauded by the National Parks administration for two main reasons.

First, integrated and co-operative planning for the use of the magnificent western part of the Province will provide a widening horizon of recreation opportunity for the increasing numbers of people who want to relate more closely with the natural landscapes of Canada.

Second, the diverse resources of the area will allow for development of more responsive policies for both Parks Canada and Alberta in meeting their own special mandates for the provision of recreation space for Canadians - particularly Albertans.



Without the expanded opportunities provided by the Eastern Slopes area, we would in the near future require some form of rationing of the National Park recreation opportunities in order to prevent destruction as a result of over use. We do not wish to remove many of those uses which have become a part of the recreation traditions of the National Parks and we do wish to expand our opportunities to provide the special experience of a National Park to as many people as can be handled.

If people could be better distributed throughout the parks, the danger of over use would be minimal. Realistically however, visitors congregate in areas where facilities and services are readily accessible. Experience shows that as soon as facilities are expanded to meet a need, the need itself increases. The result of such a spiral, if uncontrolled, would be the progressive degradation of large parts of the park's environment. As a result, Parks Canada has started to consider the point of balance between supply and demand which it can strike in developing facilities and services.

We believe that in the four services centres of Waterton, Banff, Jasper and Lake Louise, only the latter has any really sizeable further development

potential - the others are arranged in tolerable limits in the National Parks context. However, greater total visitor use can certainly be made of each of these centres if the use period during the year can be expanded. Furthermore, comprehensive redevelopment of them could undoubtedly produce more services without increasing their land areas. Both of these options are long term and require substantial adjustments to both social and economic structures if they are to become possible.

Steps to solve this problem confined within the park boundaries can have only limited success. Therefore we welcome, and will continue to encourage, programs and developments which would provide complementary and alternative facilities in the areas adjoining the National Parks. We believe, also, that the National Parks can without in any way compromising the high purpose for which they have been set aside, play a vital role in a co-ordinated program of regional development. Thus, the possibility of developing plans for the integrated development of services and facilities in an area as large and diverse as the Eastern Rockies provides, in our opinion, a unique opportunity.

That opportunity is to furnish a basic pattern in which the economic development of the whole region can be planned in relation to the diversity of both available resources and public demand. We welcome the opportunity to redefine our policies, within the limits of our legislative mandate, in the context of an overall regional development plan and we are prepared to plan and to take further steps in this direction. We recognize, in particular, that care in joint planning will be required to ensure that present or future communities outside the park must have the opportunity to provide services which will be economically viable and not just to inherit the uneconomic and undesirable by-products from the parks.

In a statement to the Mountain Parks Public Hearings, the Province of Alberta suggested that Parks Canada and the Province should co-ordinate their efforts to secure complementary development programs for National Parks and their adjacent regions. We welcomed this approach and in the case of the Cooking Lake-Hastings Lake hearings of your Authority, Mr. Chairman, we were pleased to present a brief concerning Elk Island National Park. The invitation to be

represented on Alberta's Study Committee arising from that hearing is one which we are indeed happy to accept.

In closing this part of my presentation, it is perhaps necessary for me to stress that random developments outside of the parks will have only a token effect on the problem. In some cases, they may merely relocate the problem or, worse, create a series of environmental disasters. Sound ecological and regional planning practices must be considered and applied in the location and design of required facilities. For example, the location of recreation facilities abutting park boundaries, needs to be carefully considered particularly where the immediately adjacent park lands are sensitive to such use and zoned for strict environmental preservation and conservation measures.

I am sure that you also recognize that good design and site planning in the development of these facilities is essential if the very thing we are both setting out to conserve and preserve is not to be destroyed but maintained for future generations.

## 2. Wildlands and Wildlife Management

The areas designated as National Parks are rarely, if ever, ecologically complete and self-sustaining. While it would be desirable from a management standpoint to establish park boundaries in such a way that all natural entities to be preserved are self-contained and sustained in the park area, there are often factors which render this impractical, if not impossible. Because of their mobility, frequently migrating or ranging over vast distances, wildlife species are an obvious illustration of the need for co-operative management programs between Parks Canada and agencies responsible for resource management in areas adjacent to National Parks. In fact there is often a need for such co-operation in areas not contiguous to the park. To cite one example, Wood Buffalo National Park contains the only known nesting area for the Whooping Crane, an endangered species. This great bird migrates thousands of miles to the Aransas Wildlife Sanctuary on the Gulf of Mexico. It is obviously impossible to include the territory between in a giant reserve. Protection of this species requires the concern and co-operation of many federal, state and provincial resource management agencies.

Another example, that of the elk, or *Cervus*, is perhaps more relevant to this meeting. The animals migrate from summer range in the Mountain Parks to winter range in the valleys and foothills. Much of the summer range lies outside of the parks and the animals, disregarding man's artificial boundaries, regularly move back and forth between park and private or provincial land following their ancient patterns. This movement, a boon to hunters, is a bane to farmers as the elk compete for forage with domestic cattle and frequently damage cropland. Clearly, if viable elk populations are to be maintained - an objective of the National Parks - then a co-operative management program is desirable.

Although our management philosophies and objectives may differ, we share areas of mutual concern and benefit. I am certain we share many common objectives as well. In managing and protecting natural resources there are many common problems, overlapping or complementary activities and situations which recognize no boundaries. Each also has an obligation to his neighbour, be he the federal government or a private rancher. For example, should our policy in a certain

area of a park increase the forest fire hazard well above normal, then we would feel obligated to increase our fire protection capability so that neighbouring private or provincial lands are not subjected to increased fire risk. We suggest that co-operative planning and consultation between the various agencies and individuals of the area should be encouraged so that each will be knowledgeable of the needs and concerns of the others and so that a mutually beneficial program of management can be developed for these interfaces between the park, the province and the private sector.

### 3. Resource-based Industries

The resource extractive industries in the Alberta foothills bear a relationship to, or have an influence on, certain aspects of the purpose and management concepts of the Rocky Mountain National Parks. Indeed, the nature and extent of extractive industries, agriculture and hydro developments adjacent to the parks have a greater potential impact on the National Parks values than do any of the other land uses. Clear-cutting of forests, strip mining, road building and overgrazing are examples of activities which can be a threat to those values. In contrast, selective forest harvest, underground



mining, controlled access and game ranges, properly managed, are not in as obvious conflict with National Parks objectives. Other types of industrial activity such as oil and gas extraction, while not requiring major changes to land surfaces, may in some cases adversely affect adjacent park lands. Hydro power developments imply the changing of water flows and the creation of impoundments which can lead to substantial changes in all ecosystems which have some physical connection or are influenced by the drainage effects.

Non-recreation development in the Eastern Slopes area would likely provide new access to previously remote areas and the wilderness quality which characterizes so much of this area could be compromised. The effective management of unique and wilderness zones in National Parks lands, adjacent to such areas, would become much more difficult. On the other hand, closure of traditional public access routes resulting from land leases or grazing permits can result in the creation of private playgrounds to the detriment of the general public. The integrity of the National Parks cannot be successfully defended at their boundaries like a mediaeval fortress. They can only be secured, in the long term, within the framework of the Region within which they are located. Because

of the size, character and the purposes these Parks serve, special care is needed in order that they may play their part now and for the future as a major element in a sound plan for the best use of the wealth and beauty of the Eastern Slopes.

Land use changes which create disruptions of traditional wildlife habitat and game migration routes, the bisecting of important ecosystems, pollution and other similarly undesirable effects, have to be studied with a sharp eye for the consequences. We have found from experience that archaeological sites and complex biotic relationships are sometimes not recognized until they are destroyed or severely degraded. All Canadians lose in cases like this.

Mr. Chairman, we in Parks Canada are striving to strike a balance in accommodating the needs of Canadians for recreational outlets with our mandate to respect the conservation principles of the National Parks Act. We want to strike this balance in the context of regional planning and are anxious to co-operate with the provincial authorities.

We believe, with respect to Alberta's conservation program, that an understanding of our mutual objectives can be achieved, and that the resulting

complementary development of the National Parks and the adjoining Eastern Slopes in which environmental conservation is paramount, will be of benefit to both of our agencies and to all Canadians.

On behalf of the Department, I would like to suggest that appropriate staff representatives from our respective agencies form a small joint committee which can act as a bond or strong contact between our planning operations. This would be similar to the joint planning group which we have mutually agreed to establish for the continuing regional study for the Coking and Hastings Lake Moraine region, of which Elk Island National Park is an integral part. Subject to the acceptance of this proposal by the Province of Alberta, Parks Canada is prepared to appoint the appropriate members of its staff to such a Committee, to work out mutually acceptable terms of reference and to co-ordinate its efforts as closely as possible with those of the Province to secure the complementary development of each of our programs in the Rocky Mountain region of Alberta.

Mr. Chairman, Parks Canada, which I represent, does not at this time wish to

comment on any of the proposals now before this hearing. It seeks rather an opportunity to constructively co-ordinate our several interests for the benefit of the entire region and for all Canadians. Finally, may I look forward to the establishment of a more complete working arrangement between our two agencies. Thank you.

## QUESTIONING BY THE AUTHORITY

MR. KINISKY:

There seems to be some reason not to have exploration activities in the extractive industries going on along the borders of the national parks. Perhaps a buffer zone should be established. What sort of things are you thinking about in that area?

MR. FODCHUK:

In the past we have had a fairly good working arrangement with various departments of the Province of Alberta whereby we considered in detail with them proposals for development within a one mile zone adjacent to national parks. Both the province and its various departments, such as the Department of Highways and the Department of Lands and Forests, have come to us whenever they had development proposals and asked for our evaluation of these, relative to what might happen adjacent to the national parks. We would like to have this as a continuing sort of liaison apart from what I have suggested in my brief.

MR. KINISKY:

What is the position of Parks Canada relative to tourist promotions, which continue to attract more and more people to what is apparently an already crowded situation?

MR. FODCHUK:

The Federal Tourist Information Bureau has a different objective from ours in that it is primarily concerned with attracting tourism to various parts of Canada and to the national parks. We would like to see parks in the province set aside or developed to take advantage of the tremendous increase in tourism that is taking place in Canada at this time. We would be prepared to share the load with you.

MR. KINISKY:

Is it necessary that the bank of Scalp Creek, which runs along the side of Ya-Ha-Tinda ranch, be used as a garbage dump?

MR. FODCHUK:

Not at all. Are we using it for that purpose?

MR. KINISKY:

I saw it three years ago and I was a little distressed. I saw it again a couple of weeks ago and I think it would be nice if it were cleaned up.

MR. FODCHUK:

We'll certainly look into that.

MR. DOWLING:

We have been told by wildlife biologists that Ya-Ha-Tinda ranch is in prime winter range for elk and bighorn sheep. Does Parks Canada have any plans to winter its horses some place other than Ya-Ha-Tinda ranch in the future?

MR. FODCHUK:

At the present time we are using the Ya-Ha-Tinda for raising horses, which are used by the warden service for management and operations in the national parks. This ranch is the repository for most, if not all, of our horses for the western region. We are having a range management plan prepared together with the Canadian Wildlife Service. At the present time we do not intend to change our program. However, we would be prepared to listen to any suggestions that come out of these hearings and that may evolve at a later date so far as the province is concerned with the use of the areas adjacent to the Ya-Ha-Tinda and the Ya-Ha-Tinda itself.

MR. DOWLING:

Do you feel the ranch is threatened by the coal mining leases that are around it?

MR. FODCHUK:

No, we haven't really studied the implications of this to the ranchland itself. But inasmuch as the ranchlands are also a game sanctuary, we would be concerned about the area that these game animals range over. I think it would be wise for our agency and your various agencies to consider how the resources of this entire valley can be used to the best advantage.

Brief submitted by: Mr. A. L. Hogg  
High River, Alberta

MR. HOGG:

I might say first that although this is a private brief, it has the support of a number of organizations. Among these groups are over 100 pupils of Turner Valley High School including the principal, Mr. Duke, and a number of teachers, the 20-30 Club of High River, the Girl Guides, the Canadian Legion and the High River Fish and Game Association.

A few years ago a questionnaire was distributed to visitors to the provincial parks asking them what changes they would like in the parks system. A large majority said they would prefer less refinement so that they might enjoy nature in its natural state. The increasing demand for the use of land by all segments of our economy including recreation is closing in on the habitats of plant and animal life. If continued without restriction by zoning or other methods it will destroy our remaining ecology.

Our present forest reserves should all come within one zone with no further commercial, recreational or tourist development. Basically that is what this brief is about.

If the applied-for developments are granted, it will have a damaging effect on our natural ecology. Our ecology is a non-renewable resource. Once damaged, especially by commercial interests, it is irreplaceable. It is a valuable resource on which we cannot put a price. It belongs to the people, but will be destroyed by their own numbers if this type of commercial development is allowed.

It is agreed that people have the right to modern accommodation if they wish. But to maintain this non-renewable resource further developments must be kept out of the forest reserves.

Our forest reserves constitute our last remaining semi-wilderness truly belonging to the people. Another valuable land use within their boundaries is our wildlife, already harassed by access roads, coal mining and oil well operations. These reserves have vital winter ranges for many of our big game animals and they cannot contend with our way of living. Many of these winter ranges are only a short distance from larger towns and cities and this adds significantly to the need for special protection. It is hoped that the Alberta government will not be the means to the end of our few last remaining semi-wilderness areas.



## QUESTIONING BY THE AUTHORITY

MR. DOWLING:

Are you recommending that we maintain and continue to use the forest reserves as they are now?

MR. HOGG:

Basically, yes. I wouldn't like to see any commercial developments within them. I think possibly additions could be made to the campsites within the reserves to accommodate the people who travel.

MR. DOWLING:

Do you see a need for further campgrounds?

MR. HOGG:

Not right now, but I think there will be as the population increases.

MR. DOWLING:

What about paving the forestry trunk road?

MR. HOGG:

I very much oppose it because I feel that when people are travelling over a paved highway they travel so fast that they do not take time to look at the beautiful scenery. I think it is just not necessary. Paved roads are more dangerous than bad roads. On bad roads they have to slow down.

BRIEF: Public Hearings on Land Use and Resource  
Development in the Eastern Slopes  
Presented By: Dr. R.G. Forbis

It is obvious from the reports on the Eastern Slopes issued by the Environment Conservation Authority that intensive studies have been carried out to locate the extent and determine the nature of many resources in the area. Thus it is possible to speak with some certainty of the coal, oil and gas reserves, of timber resources, and of desirable recreational zones. To a large extent, the intensity of these studies reflects the profit motive.

In archaeology, the situation is somewhat different. Few commercial interests in Alberta donate funds for research in archaeology, even though their projects may result in the destruction of invaluable heritage resources. The government itself, until recently, was not obligated to support archaeological work. Consequently, I can state with no exaggeration whatsoever, that only a minor fraction of the archaeological inventory of sites on the Eastern Slopes is now known. By and large, the area has never been searched systematically. For some areas, it is already too late. I would hazard the guess that perhaps 1% has been explored by archaeologists with the same degree of thoroughness that a geologist looking for oil and gas would regard as reasonably adequate.

Now, with the passage of the Alberta Heritage Act, 1973, the government will find itself in a changed situation, principally because of the provision (22,2) which states that:

Where in the opinion of the Minister, land contains or may contain heritage resources that are likely to be altered, damaged or destroyed by reason of any development or activity, he may order a survey of heritage resources to be undertaken.

I should underline the passage "land that may contain heritage resources", since, with the possible exception of the Antarctic, there is no extensive tract of land on earth that is not likely to contain historical and archaeological resources. Presumably the Minister may order anyone - not just officials

withir his department - to carry out necessary investigations.

Under this new act, the Minister may appoint a Heritage Sites Board which shall advise him and make recommendations on matters concerning the preservation and protection of sites in Alberta. He may also appoint a Provincial Archaeologist and such other persons as may be necessary for the administration of this act, including classifying, preserving, indexing and cataloging heritage resources. In fact, the Minister has wide authority under the act to save the archaeological resources on the Eastern Slopes.

My plea, then, is to the Minister to urge immediate action to form the agency authorized by legislation. One of its first missions should be to complete an inventory of the heritage resources on the Eastern Slopes. From there, appropriate and intelligent decisions can be made.



R.G. Forbis

## QUESTIONING BY THE AUTHORITY

DR. TROST:

Dr. Forbis was the chairman of a public advisory committee on conservation of archaeological and historical resources and was a great assistance to us in the public hearings on that subject, which culminated in the legislation to which he gave reference. Dick, do you feel the legislation is reasonably good?

DR. FORBIS:

I think it can be made to work. I think it granted very broad powers to the minister and now I'd like to see some action.

DR. TROST:

The Act has the power that is suitable to the task, but it needs to be implemented in some of the ways you indicated?

DR. FORBIS:

I think it can be made to work, very definitely.



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PRESENTED BY:

Dr. R. P. Pharis

Alberta Wilderness Association.

A background presentation made in reference to these proposals  
is included with the Alberta Wilderness Association's presentation  
made in Edmonton.

**south ghost**

## SOUTH GHOST

The proposed South Ghost Wildlands Recreation Area poses an interesting question to the person casually glancing at it on a map. How possibly can this lobe, which juts down to the south of Lake Minnewanka, be so unspoiled as to qualify for wilderness when it lies so close to areas of heavy use? Indeed, the four-lane Trans-Canada Highway closely parallels the west and south borders of the area. As well, the South Ghost is only 45 miles from Calgary and many of its mountains form a major part of the view which is seen from nearby Banff and Canmore. Why is it that the area has escaped heavy usage, and has yet to have its wilderness values spoiled by man? One reason is probably related to the rugged terrain. This factor has certainly affected the forestry potential of the area - commercial forest is non-existent. The timber which does exist is classified as protection forest.

Due to the porous limestone rock underlying the area, the runoff waters of the South Ghost literally disappear, seeping into faults to flow underground for considerable distances. In fact, the South Ghost River only flows down its entire length in the spring when snow-melt waters flood its channel. During the summer, for a distance of 10 miles back from where the South Ghost River joins the Ghost, the South Ghost seeps into braided gravel beds. To many locals the River is known as the Dry Fork.

The surface water patterns of the area are reflected as well in the vegetation. Forests are sparse open coniferous stands. Some aspen poplar occurs close to the banks of small tributary streams and grass covered high ridges are most typical of the South Ghost.

The high elevation grassy slopes produce good habitat for the bighorn sheep and mountain goat. These high slopes supply forage for both winter and summer grazing by sheep and goat.

The area is underlain by the rocks of the first Front Range of the Rockies, the Fairholme Range which is dominated by three cliff-forming units: the Cambrian Eldon Formation, occurring mainly at the eastern border, the Devonian Palliser Formation, and The Mississippian Rundle Formation. All of these rocks are cliff-forming carbonates, either limestone or dolomites. The narrow valleys between the cliff-forming units have been cut either along less resistant rocks, such as the Exshaw and Banff formation at Jura Creek, or along shattered rocks in thrust-faulted zones. The First Front Range has been pushed over Upper Cretaceous rocks at its eastern edge along the great McConnell thrust.

In the southwest part of the second Front Range, the Rundle Range exposes rocks of Devonian to Mississippian age. It has been thrust eastward along the Rundle fault over younger Mesozoic rocks, ranging from the Triassic Spray River Group to Jurassic-Cretaceous Kootenay Formation. These younger rocks are dominantly sandstone and shales, and are covered in large part by glacial debris and stream deposits.

The white man probably first came to know of the presence of the bighorn in the South Ghost in 1800, when Duncan McGillivray, travelling with David Thompson on



a visit to the Bow River area, killed, collected and prepared several specimen animals from the region for systematic scientific description and classification. Since that time, although the South Ghost has been known to produce trophy rams, the herds over the years have been lightly hunted and more or less left to their own, their numbers remaining constant.

Why should anybody bother to venture through country of such difficult ground conditions and rugged mountain terrain, a region which offers no easy passes over the ridges to the valley beyond, when right next door there exists as obvious and gentle and natural a route as any; the wide flat corridor of the Bow Valley? This rationale has perhaps caused the South Ghost to be so long ignored.

The lack of suitable low elevation habitat results in a small ungulate population. Moose, elk, deer and black bear are scarce, but hunting pressure is light, due to limited access.

The other big game species of significance in South Ghost, aside from the bighorn, is the mountain goat. One winter range area occurs along the north border. Hunting of these animals has been banned in all of Alberta for several years due to severe reduction of their numbers in the past.

Fishing is not a significant recreational resource in the South Ghost. The only major river, the South Ghost, is dry for much of the year in the lower reaches and tributary streams have a steep gradient and widely fluctuating flow.

The South Ghost, an area of about 93 square miles, is typified by north-east, southwest running continuous limestone ridges. This pattern is only broken where the South Ghost River cuts through the ranges at  $90^{\circ}$ , and along the northern boundary where the ridge there bends from the diagonal pattern to a more east-west orientation. Several peaks rise to almost 9,000 ft; Orient Peak, Saddle Peak, Mt. Charles-Stewart and Gravel Mountain and Inn Mountain are the key peaks.

No coal bodies exist in the area. Some leases for oil and gas have been acquired; yet, the fact that no wells have been drilled and only one seismic trail constructed (some years ago) indicate the region's generally low potential for commercial production. All lease areas are located in the eastern third of the area.

Some quarry sites occur on or just within the proposed boundaries. These are not extensive operations (in terms of acreage) and it will be a simple matter to adjust boundaries to exclude the sites from the final borders.

The area's rugged terrain limits its use for grazing. At present only the northeast strip of the South Ghost Wildland Recreation Area falls within a provincial grazing allotment. As such, grazing presents no conflict with a primitive recreation classification.

The South Ghost, long ignored in the past, today represents little resource value except for sheep and goat range, wildlands recreation, and watershed production. These three uses are easily compatible. There is little reason why the area should not then be preserved as a recreational wilderness.



Snowshoeing

R.P. Pharis

Pictograph Canyon on  
Grotto Creek

S. Herrero

So long as the hiker or horseman remembers that water is scarce in the lower valleys the area can provide excellent pack trips of moderate length. The continuous northeast-southwest ridges, covered mostly in grass, are good routes for scenic cross-country niking. A major trail up the South Ghost links up with the Carrot Creek Trail in Banff National Park to the west, and joins the main Ghost River - Lake Minnewanka Trail to the east. One could make a circle route, using both Park and wilderness lands, by starting at Lake Minnewanka, hiking up Carrot Creek to South Ghost Pass, thence down the South Ghost to the main Ghost, coming back up to Lake Winnewanka over the low divide.

The main access exists along the east-west South Ghost corridor. Another access originates from the 1A Highway behind Exshaw, climbing Exshaw Creek to a 7,300' pass and from there leading to the South Ghost River.

Grotto Creek is paralleled by the remnants of an old trail which follows the stream up a narrow gorge for 3 to 4 miles to a point where the valley opens up and several creeks join the main flow. From here two possible routes exist: a north route to Carrot Creek over an 8,300' ridge and another route to the east over a high ridge toward the Exshaw Creek Trail. Like Exshaw Creek, Grotto Creek is easily accessible, entrance being gained where it meets the Trans-Canada Highway.

Grotto Mountain, named in 1858 by Bourgeau - the botanist with the Palliser expedition - was named for a large cave in its side. Given the extensive underground drainage patterns that are found in South Ghost, it is likely that other major cave systems exist in the area, waiting only to be discovered by the adventurous spelunker.

The South Ghost has been surrounded by civilization for decades and yet remains unimpaired. Why the area has been so fortunate to have been spared from the many activities of man in the past is perhaps not the question to ponder now. Rather, it is most appropriate to ask, how this area can best be retained with all its wild splendor. Our answer is "reserve it as a recreational wilderness".



Old Fort Creek Basin in the South Ghost Area

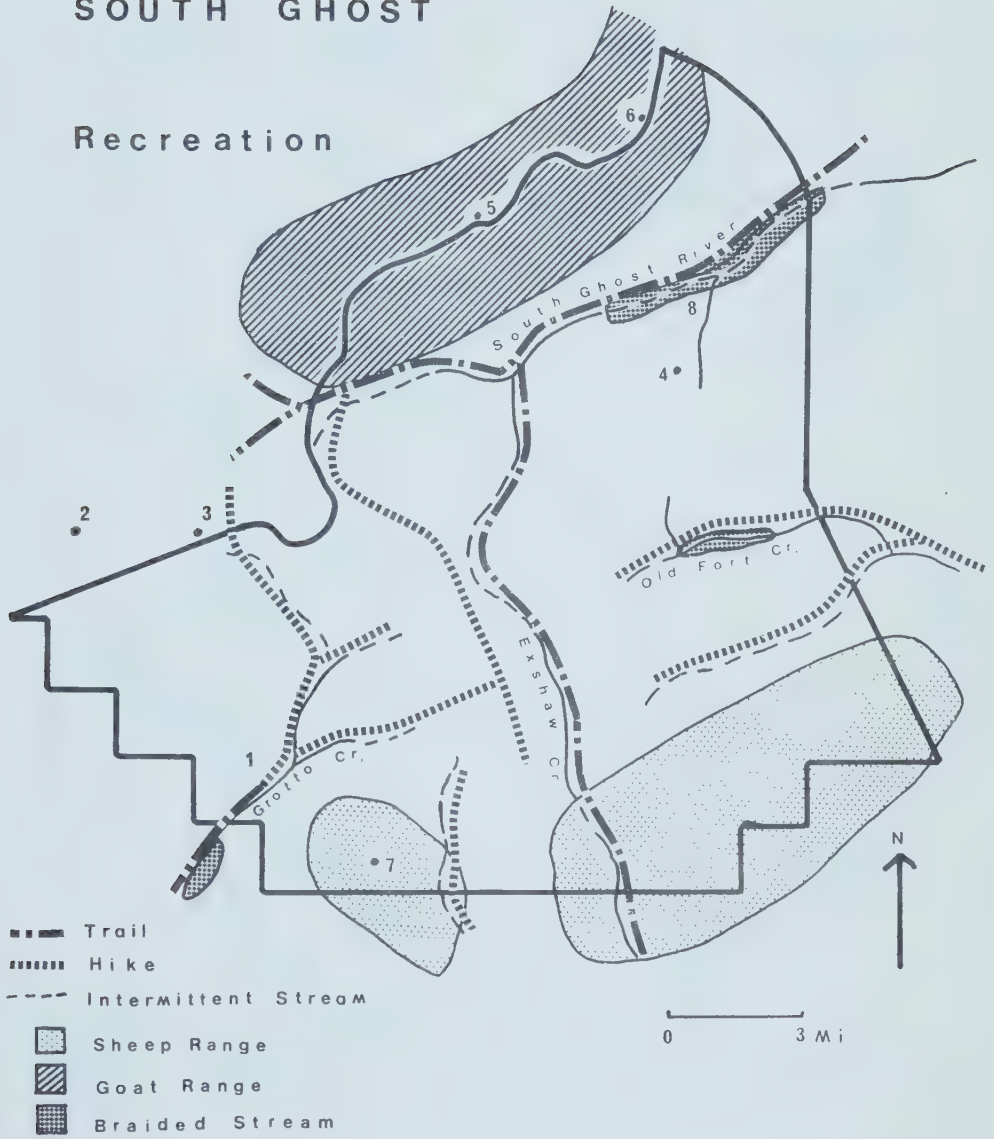
SOUTH GHOST

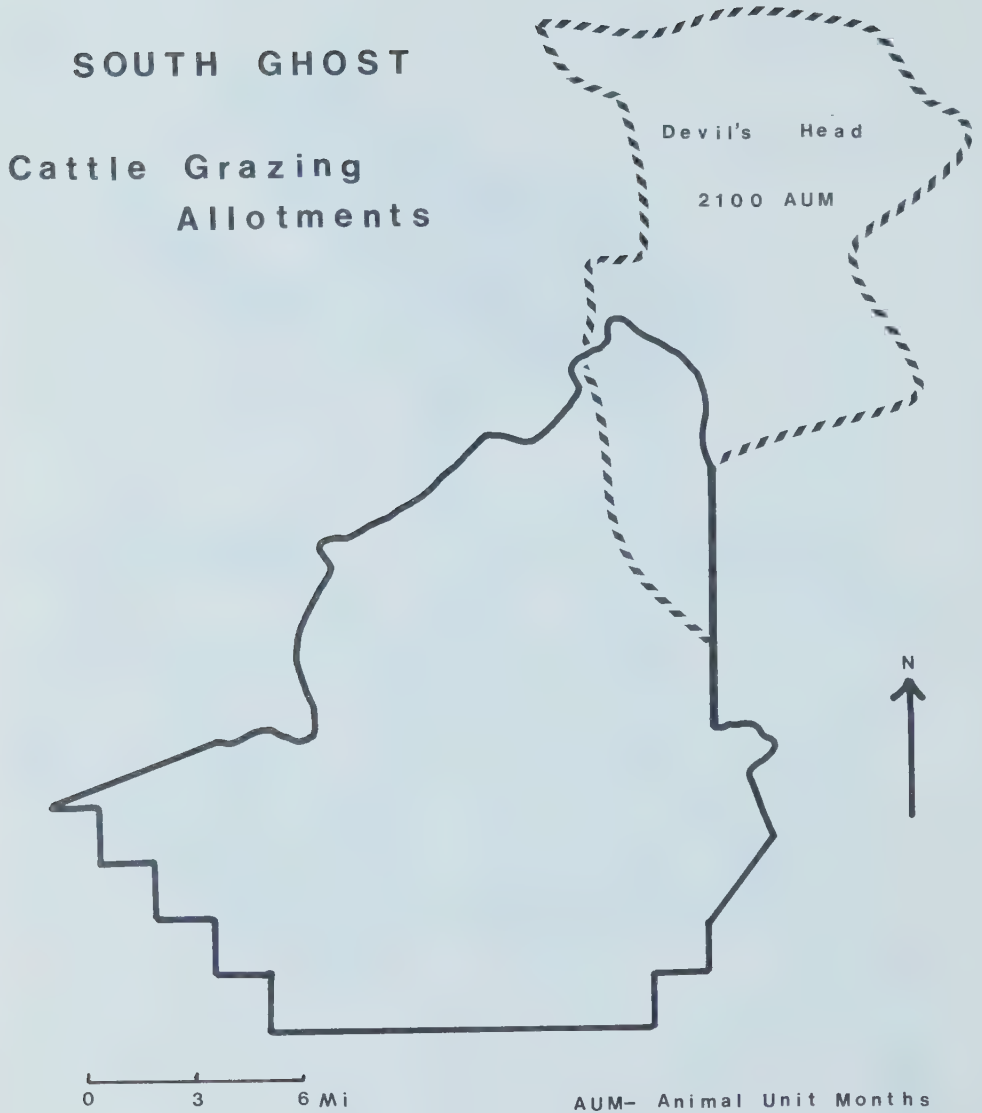
Points of Interest

1. Gorge
2. Princess Margaret Mountain
3. Mt. Charles Stewart
4. End Mountain
5. Saddle Peak
6. Orient Point
7. Laurie Mountain
8. Whole river disappears in summer  
for miles

## SOUTH GHOST

## Recreation





# SOUTH GHOST

## Forest Cover



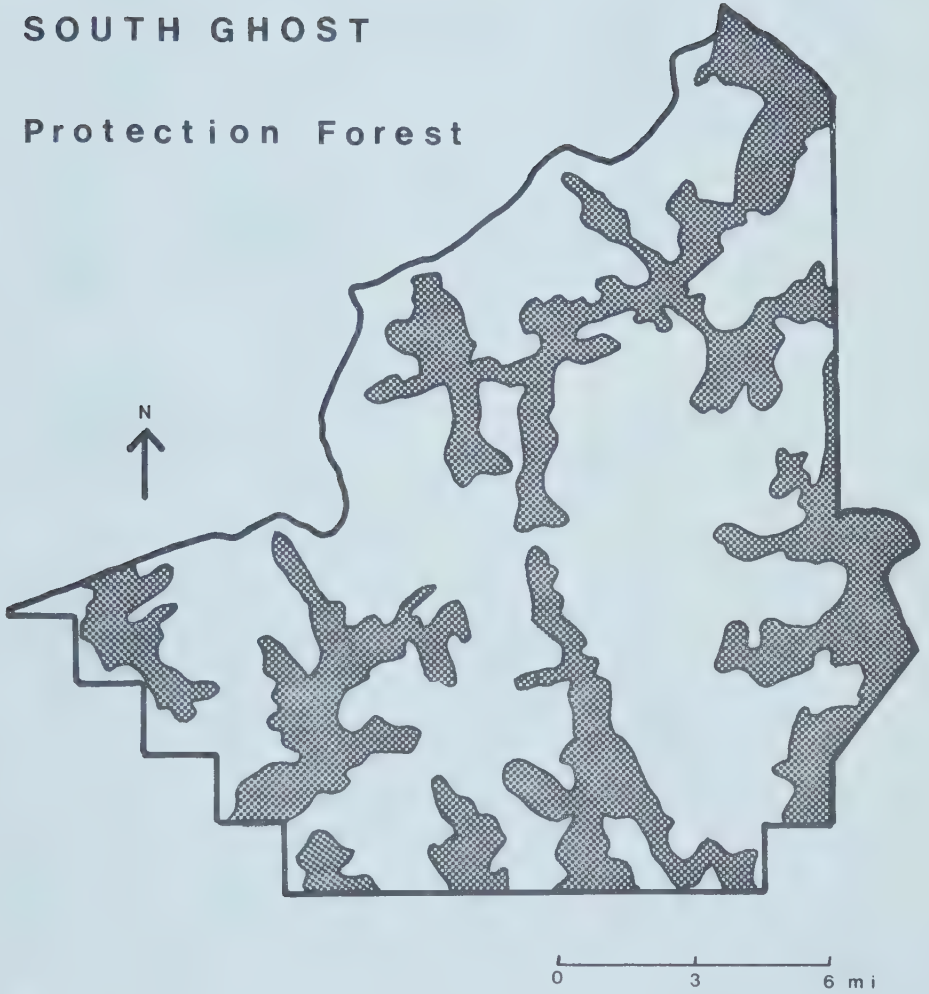




SOUTH GHOST WILDERNESS

# SOUTH GHOST

## Protection Forest

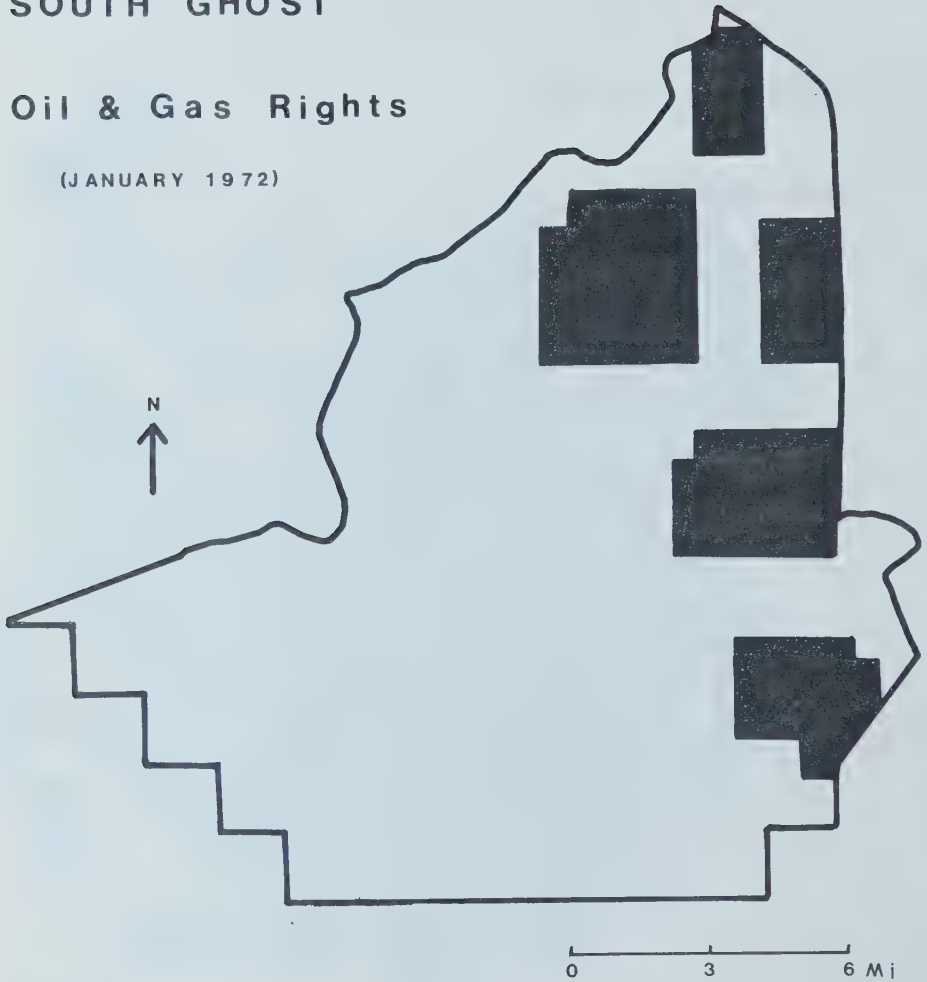


 Watershed Protection Forest

# SOUTH GHOST

## Oil & Gas Rights

(JANUARY 1972)



Oil & Natural Gas Leases



265-13

**upper kananaskis**



## UPPER KANANASKIS

Outside of the National Parks, the proposed Upper Kananaskis Wildlands Recreation Area is one of the most spectacular wildernesses in Alberta. The area is readily accessible from Calgary, situated at the end of the heavily-used Kananaskis valley. The unit contains 17 peaks over 10,000 ft, including one, Mount Joffre, which soars to 11,300 ft. The southern-most glaciers in Alberta's Rocky Mountains are found in the Upper Kananaskis, as well as several alpine lakes whose waters are tinted to vivid shades of blue as a result of suspended glacial flour particles.

The area received its name in 1858 from Palliser who explored the region. Apparently, Kananaskis was the name of an Indian - said to be Palliser's guide - who, according to legend, made a remarkable recovery from blow he received on the head from an axe.

The north and south Kananaskis passes were two of the most heavily travelled east-west corridors during the 1800's. Palliser himself crossed the northern pass. They were perhaps even more heavily used than those of the North Fork, Fording River or Elk passes to the south, or the White Man or Simpson Passes to the north.

Apparently the Kananaskis Passes provided a more direct route between the Indian settlements at Canal Flats, on Columbia Lake, and the East Slope than did other passes. Certainly the Kootenay Indians used the routes intensively for travelling and hunting. In fact, Dr. Hector, Palliser's assistant, noted that Kananaskis Lakes were the favourite elk hunting area of the Kootenays. The Kananaskis Passes fell into relative disuse, however, in later years. By the 1850's, the Shuswap Indians had forced the Kootenays south from Canal Flats, so that there was no longer advantage in being able to quickly reach the old settlement on Columbia Lake.

It seems likely that the Kananaskis valley was a settlement or use area by prehistoric man. However, prior to study being done on the area's archaeology, road building and reservoir flooding obliterated perhaps 90% of the potential sites. Thus it seems unlikely that much will ever be known as to the extent ancient man used the area.

In terms of more recent human activity, the Upper Kananaskis has been little used. An abandoned gypsum mine scars the east side of the lower slopes of Mt. Inefatigable. The Kananaskis Lakes, of course, are power reservoirs; in conjunction with these reservoirs, intensive recreation use (camper trucks, car camping and motor boats) has become popular. Yet all these activities occur adjacent to, and not in, the proposed wildlands recreation unit.

At present, the Upper Kananaskis shows no potential for oil and gas - it has no leasing or reservations. Similarly no coal possibilities are indicated. Forestry values are marginal. The only commercial forest (i.e., not high alpine, rock, or protection forest) is located immediately adjacent to Upper Kananaskis Lake. Thus, there seems to be little alternate resource conflict and no reason at all why the area should not be reserved for primitive recreation.



UPPER KANANASKIS

## UPPER KANANASKIS

## Points of Interest

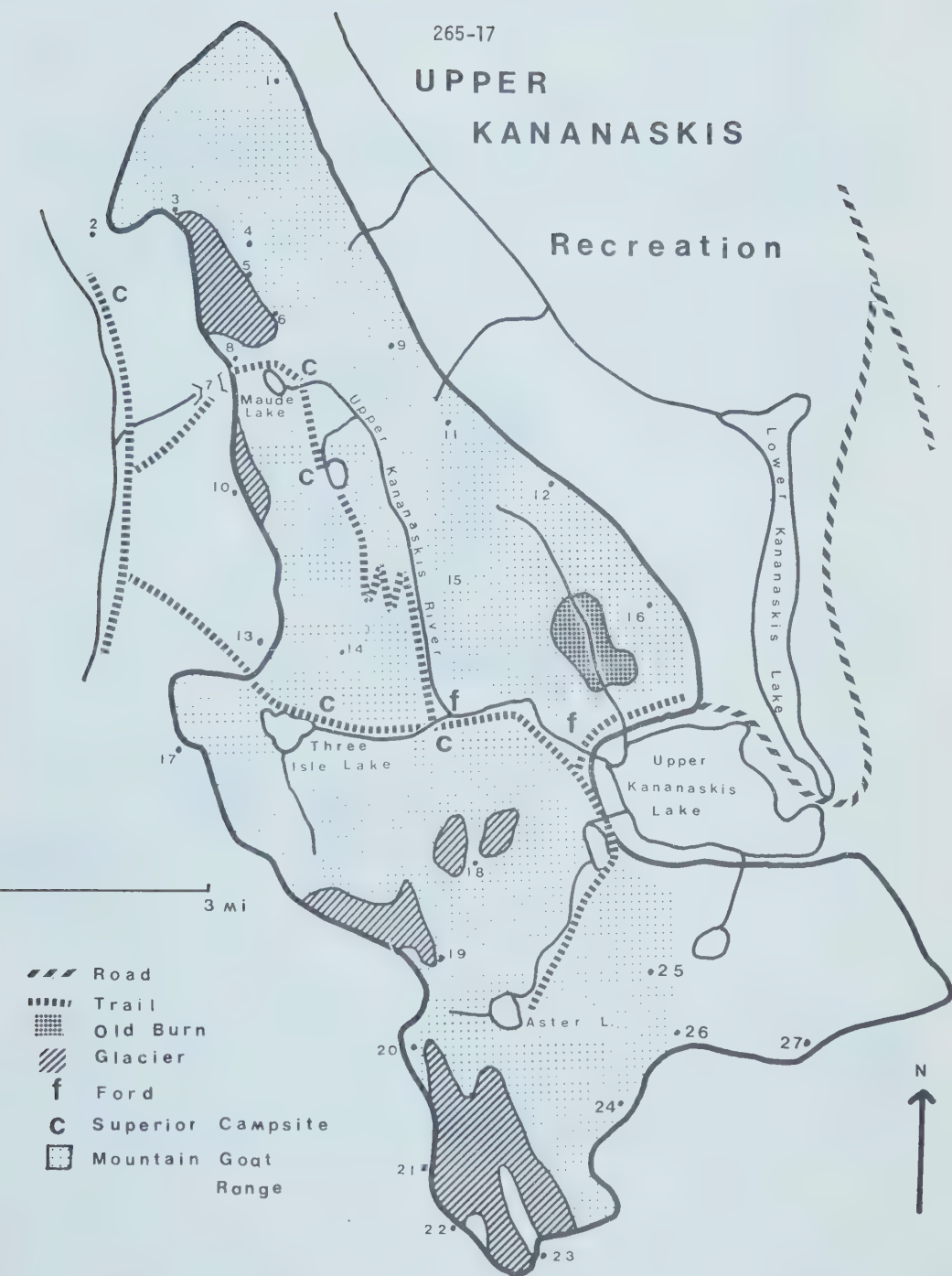
- |                        |                       |
|------------------------|-----------------------|
| 1. Mt. Murray          | 15. Turbine Canyon    |
| 2. Mt. Sir Douglas     | 16. Mt. Indefatigable |
| 3. Mt. Robertson       | 17. Mt. McHarg        |
| 4. Mt. Smith-Dorrien   | 18. Mt. Lyautey       |
| 5. Mt. French          | 19. Mt. Northover     |
| 6. Mt. Jellicoe        | 20. Mt. Warrior       |
| 7. N. Kananaskis Pass  | 21. Mt. Cordonnier    |
| 8. Mt. Maude           | 22. Mt. Manga         |
| 9. Mt. Black Prince    | 23. Mt. Joffre        |
| 10. Mt. Beatty         | 24. Mt. Marlborough   |
| 11. Mt. Warspite       | 25. Mt. Sarraill      |
| 12. Mt. Invincible     | 26. Mt. Foch          |
| 13. S. Kananaskis Pass | 27. Mt. Fox           |
| 14. Mt. Putnik         |                       |



265-17

# UPPER KANANASKIS

Recreation



265-18

# UPPER KANANASKIS

Protection

Forest



Watershed Protection Forest



The region has many characteristics which suit it to wilderness recreation. Most significantly, the Upper Kananaskis is unimpaired by the activities of man. It is also, as mentioned, a highly scenic region. Being located adjacent to the newly dedicated Elk Lakes Provincial Park in B.C., an Upper Kananaskis recreational wilderness, in combination with this B.C. park, would create an ideal interprovincial wildlands recreational unit, especially if B.C. chooses to give protection to the upper Palliser Valley.

Many different wildlife species are present in the Upper Kananaskis, although for the most part numbers are low probably because of the lack of suitable winter range. The only charted winter range is for mountain goat - about 80% of the Upper Kananaskis is designated as such. Even so, goat are not abundant. A few elk, 15 or less, summer around Maude and Lawson Lakes. Black bear probably roam the whole region, although their sign is most often noted around Turbine Canyon. A few sheep are also found in the area. Because of the apparent low game population levels, hunting in the Upper Kananaskis Wildland Recreation will have to be strictly controlled, perhaps by a permit system.

Three Isle, Maude and Lawson Lakes have been stocked with cutthroat trout. Three Isle also retains a small number of golden trout, remaining from an earlier stocking.

There are two major trail routes in the Upper Kananaskis, one leading up the Upper Kananaskis River to Lawson and Maude Lakes and from there over the North Kananaskis Pass. This is the route described for the Great Divide Trail, between Kananaskis Lakes and the Palliser River (on the B.C. side of the pass). The trail is in good shape, perhaps a little difficult to locate in lower Turbine Canyon where it climbs up an avalanche slope from the Kananaskis River towards Lawson Lake.

The other trail leads up the Kananaskis River to Three Isle Creek and then continues on towards the west, past Three Isle Lake, up to South Kananaskis Pass. It is possible to pick your way down a steep, narrow scree chute on the other side of this pass into the Palliser River, in B.C., and then to travel north, by trail for some three miles, until meeting the trail to North Kananaskis Pass. This provides for an interesting (but rugged) circle route into British Columbia and back.

There is a third route in the Upper Kananaskis to Aster Lake used by climbers, however access by way of trail to the Lake is difficult. Hopefully in the future, it will be improved.

As might be expected, climbing in a region with so many high peaks is quite challenging. The major peaks were first climbed in the 1920's; Mt. Maude in 1922 by Rudolf Aemmer; Mt. Sir Douglas in 1919, by Dr. Hickson and Edward Fenz; Mt. Joffre by Hickson and Fenz; Mt. French in 1921 by Fenz. However, new routes and ascents are continually being accomplished such as the ones pioneered during the climbing camp of the Alpine Club of Canada in 1964. Perhaps the only drawback to climbing in this magnificent area is that rock quality tends to be poor, requiring experience and skill to negotiate the crumbling sedimentary rock.



The Alpine Environment, Feeder Creek  
to Turbine Canyon

R. P. Pharis

Upper Kananaskis, a relatively small area of fifty square miles is located primarily in the alpine and subalpine. This country, covered by snow for much of the year, is clothed in fragile vegetation - herbs, grasses and forbs. Travelling through flowered patches is to be avoided for heavy hiking boots have a real and long-lasting impact on the vegetation. The effect of camping in the alpine, even for only a night, results in the killing of many plants in the campsite vicinity. Even a few camping parties in fragile areas of the high alpine can wear away the vegetation, leaving a sizeable area of bare land. This erosion usually occurs around lakes where camper pressure is concentrated. In areas of British Columbia, and in California, whole lake shores are now completely bare of vegetation due to this cumulative effect of back-country users. Certainly the same fate faces areas like the Upper Kananaskis if care isn't taken by campers.

Thus, the high-country camper, when travelling through the high alpine, should make an effort to avoid over-nighting in lush alpine flower and grass areas. It is far better if the camper restricts his campsites to treed areas - perhaps some distance from the alpine lakes.

If the hiker can create an adverse impact on an alpine region like the Upper Kananaskis, then certainly to a far greater extent, so can the horserider. A



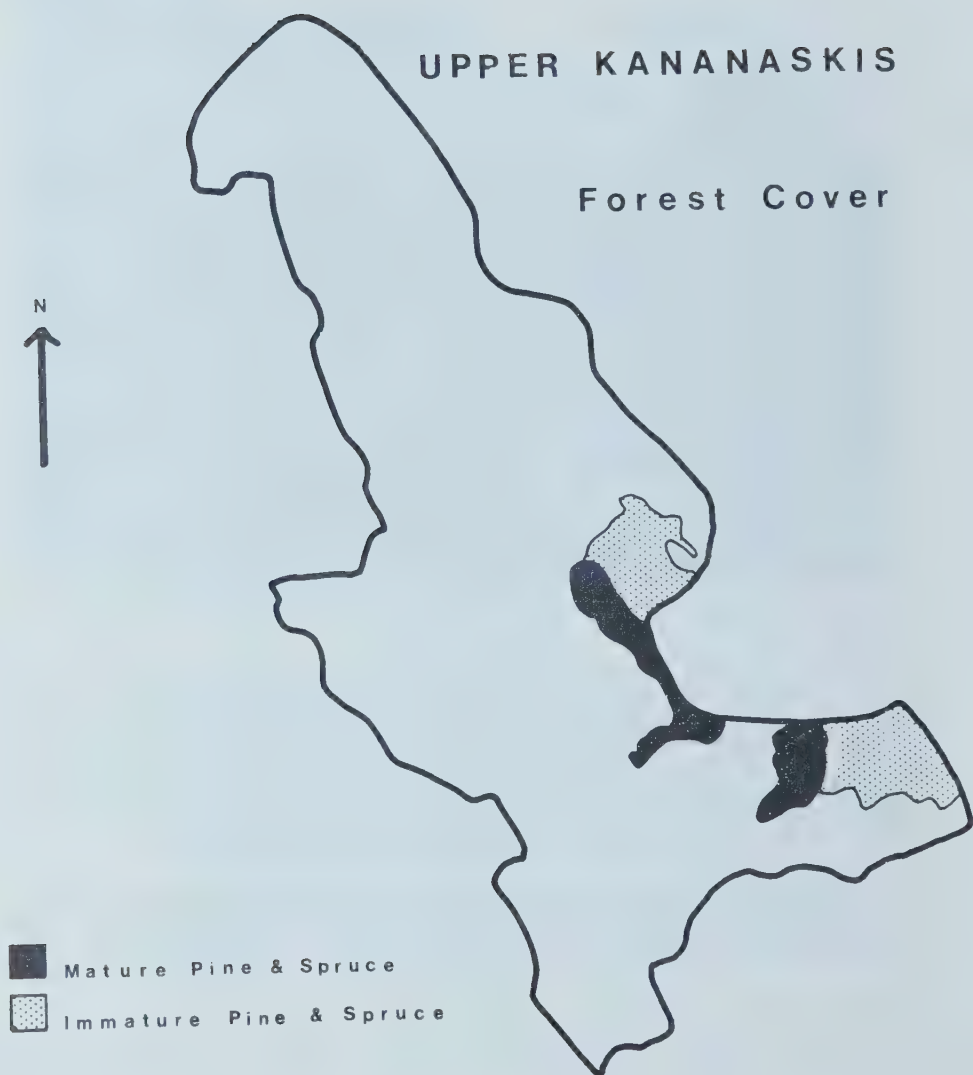
Top of the Pass

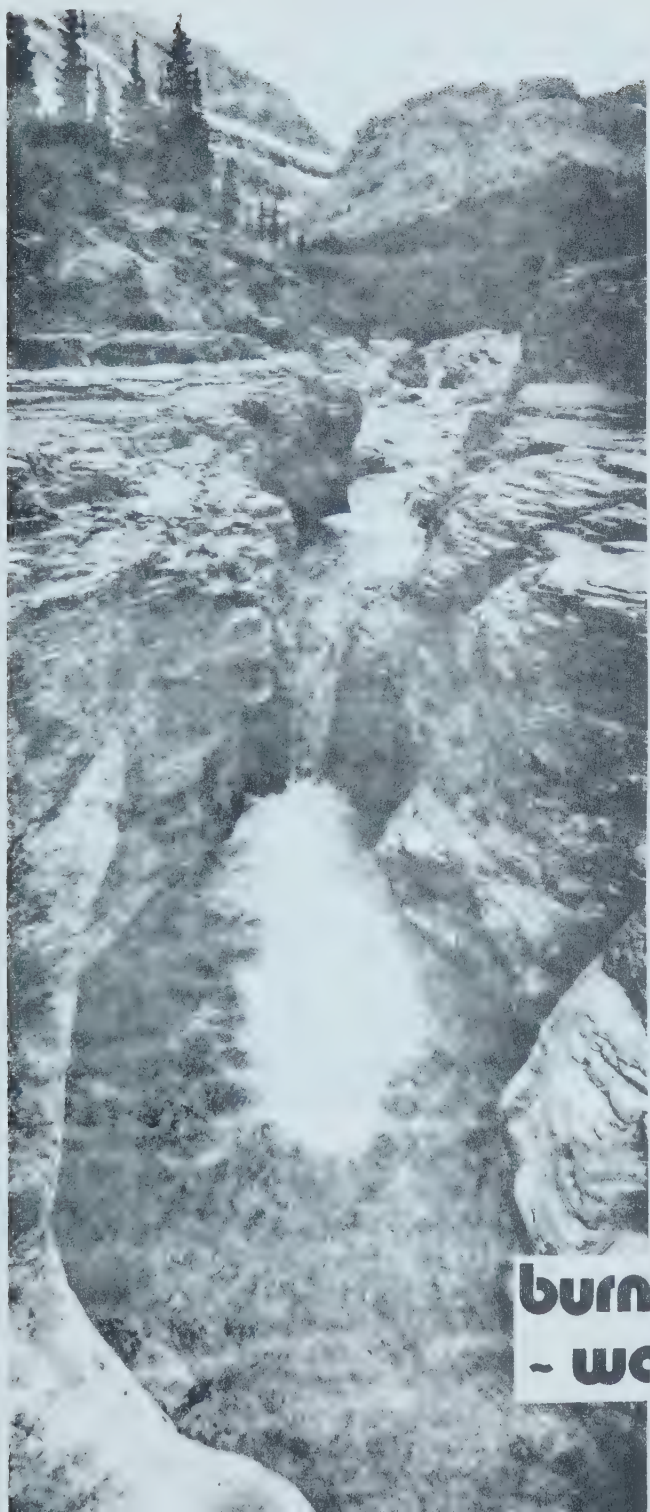
R.P. Pharis

group of horses (especially large parties) passing through high open meadows can wear a series of tracks that may remain for up to 30 years. Wherever possible the horseman should seek to minimize his impact on this sensitive environment by always camping below the alpine and travelling up to the fragile meadows on foot. If horses must be taken, ensure that they stay to the existing trail; prevent them from making surplus secondary trails. When it is necessary to graze horses in the high country try to keep them off the fragile meadows; let them feed lower down where the grasses and cover are more resilient.

High-country campers too often seem unaware of the damage that cutting boughs for placing under sleeping bags, or trees for lean-tos, can cause to the alpine. Remember the age of these smaller trees and think just how long it will take for them to be replaced.







265-23

**burnt timber**  
**- waiparous**



## BURNT TIMBER-WAIPAROUS

The average Calgarian may not have visited the headwaters of the Burnt Timber and Waiparous Creeks, but he is familiar with its mountainous country. For many of its peaks can be seen each day that the Rockies are visible to the city. In particular, the column shape of the Devil's Head Mountain is easily recognized. Any wildland area this close to a city the size of Calgary is obviously going to be of great recreational significance in the coming years. The Burnt Timber-Waiparous Wildlands Recreation Area not only is conveniently close to a large urban population, but is strikingly beautiful as well.

At present little is known of the region's prehistoric use. Archaeologists have yet to thoroughly explore its territory. However, since most of the region escaped being covered by the glaciers of the ice age, it can be expected that human dwelling sites 12,000 years or older may be discovered. The eastern parts, well known for their wildlife production, are understood to have been a key hunting area for the Indians. Some of the features in the region bear names which have evolved from original Indian descriptions. Waiparous, for example, was Stony Indian for "Crow (Indian) scalp". The Stonies, after hunting in the region, would bring both their meat and trophies, especially bighorn sheep, to sell to the white man, who came by train to the Canmore Corridor in the 1890's.

Use of the area has been light in more recent times. Although some early logging occurred to the east of the proposed Wildlands Recreation Area, it would appear that timber values were so low that operations never penetrated the region. Indeed, the only area of mature timber exists in the northeast corner of the unit. Most of the region is in alpine or protection forest which ought to be managed not for wood fiber, but rather in the interest of watershed conservation and protection.

The Devil's Head Ranch was established by the Brewsters in the Upper Meadow Creek area as a winter range for horses used in Banff Park in the summer for tourist trail-riding. The ranch is now abandoned, although some 150 horses are still grazed on permit in the vicinity. The old ranch is located just south and east of the proposed recreational wilderness. Wild horses, descended from "escapees" of the ranch, now roam and are often sighted along the foothill ridges just outside of the Front Range.

Grazing permits were issued in the early days for the eastern part of the Burnt Timber-Waiparous; in fact two of the allotments were even issued for sheep. Today, although the sheep are gone, grazing allotments have been extended over much of the region. Three allotments are involved in the area proposed for recreational wilderness: Burnt Timber - 700 animal unit months (a.u.m.); Upper Fallen Timber - 900 a.u.m.; Ghost River - 1850 a.u.m. Only about half of the land in these three allotments falls within the proposed boundary. Other range areas, by far the most productive land, lie to the southeast, hence only about 30% of the allotment range potential lies within the Burnt Timber-Waiparous. As long as cattle are carefully managed so as not to abuse the range, grazing can be compatible with primitive recreation.

For many years much of Burnt Timber-Waiparous was included in the old Rocky

Mountain National Park. The unit was later excluded from park protection when the National Parks Branch, wishing to acquire the Japser area, was forced to give up some of their existing lands in trade.

The southern part of the area is mainly underlain by rocks of the Fairholme Range which are dominantly Cambrian, Devonian, and to a lesser extent, Mississippian carbonates, forming the main cliffs of the area. The Fairholme Range has been thrust over the younger Upper Cretaceous sandstones and shales to the east along the great McConnell thrust fault. The contact between Paleozoic and Mesozoic rocks marks the boundary between foothills and plains. Within the Front Range, there is a good deal of repetition of rock units along less important thrust faults.

In the northern part of the area, the McConnell thrust fault is folded, and the mountain front is displaced sharply to the west before resuming its more general northwesterly trend. Most of the northern area is underlain by younger Mesozoic rocks structurally beneath the fault. However, a major anticline beneath the folded thrust plate exposes rocks as old as Mississippian.

The only conflicting resource use potentials are perhaps those of oil and gas extraction. The Hunter Valley gas field is located directly east of the unit; in fact, the west boundaries of the gas field also serve to delimit the proposed recreational wilderness. Though this producing gas field is adjacent to the Burnt Timber-Waiparous, it is possible that no potential for production within the Wildlands Recreation Area exists. Several leases are currently found in the area, although drilling has yet to occur. The rough terrain of the western part of the region will make wildcat drilling an expensive proposition, it may remain untouched. On the more vulnerable, gentle terrain of the eastern portion a decision by government will have to be made regarding the eventual best use of these wildlands.

The wildlife resources of the Burnt Timber-Waiparous are impressive. Black bear, grizzly, mule deer (and a few whitetail), elk, moose, bighorn sheep, as well as a very few mountain goat, are present. Winter range for bighorn sheep and elk exists north of the Ghost, on the slopes of the Upper Burnt Timber and the Upper Sheep Creeks. The Upper Burnt Timber provides a good opportunity for sighting elk and mule deer as much of its forest cover was burned in years past, thus producing excellent forage conditions. It is from this general area too, that several trophy bighorn rams have been taken in recent years.

One of the better moose hunting and viewing areas in the eastern slopes of the southern Rockies is to be found in the muskeg-like terrain northeast of Margaret Lake, near the Waiparous and South Burnt Timber Creeks. Small herds of elk are also present as are wild horses. A band of mountain goat, very small in number, is found in the Upper Waiparous.

The fishing potential throughout the Burnt Timber-Waiparous generally ranges from moderate to good. Due to the small size of the streams, however, the sport fishery cannot withstand intensive angling use without deterioration. The present light to moderate use (due to lack of immediate access roads) allows for good angling. Should the area not be preserved as wilderness, but rather "opened up", the sports fishery would surely degenerate.



Upper Waiparous River  
in the Burnt Timber-  
Waiparous Wildland  
Recreation Area

R.P. Pharis



A natural burn

R.P. Pharis

Johnson and Waiparous Creek both contain Rocky Mountain whitefish, cutthroat and Eastern Brook. The Upper Waiparous, within the front range, is presently barren, but the many deep pools likely indicate some fishery potential. The North and South Burnt Timber provide limited fishing for the Dolly Varden and Eastern Brook char. Rocky Mountain whitefish are to be found in the lower reaches of the stream.

In viewing the recreation map of the area, it is obvious that the Burnt Timber-Waiparous is a hiking and horseback riding paradise. The routes in the region are typically river bottom trails which wind their way up the valley floors of the Waiparous, North and South Burnt Timber Creeks. The trail along the South Burnt Timber is an interesting and attractive (although unmaintained) horse trail. A trip along a trail of this sort keeps the traveller close to the river where fishing potential can be sampled at leisure.

An old fur trapper's trail is included in the proposed Wildlands Recreation Area. It winds its way up from the Ghost River, over to Black Rock Pass, across to the Waiparous, then down the South Burnt Timber. The trail is old and sometimes hard to find. Yet if one is willing to follow it, travelling just outside the front range, he can follow a route that has been used by Indians and early fur trappers for well over 100 years.

Of interest to the hiker and horseman is the fact that much of Burnt Timber-Waiparous was burned various times during this century. Most of the front range is either in grass or patches of young forest. These grassy semi-alpine areas often grow in after a particular hot fire has burned through. They provide open and spectacular scenery with views out to the foothills and prairie.

Where the fires did not burn as hot, often in valleys or where the soil was moister, forests of young lodgepole pine are now found. It is advisable when hiking in this young timber to try and avoid the valley bottoms and other areas of thick stands as they are particularly hard to pass through. If you must traverse such stands try to follow game trails, or travel the ridges and hogbacks where the forest will be thinner.

As its name would suggest, the Burnt Timber-Waiparous is a land ruled often by fire. For forest fires are indeed common in this part of the eastern slope. As recently as the summer of 1970 a major fire raged in the unit. In the extreme northeast corner of the proposed Wildlands Recreation Area 3,840 acres were burned along North Burnt Timber Creek before the blaze was finally extinguished. The observant traveller can identify areas of very hot and somewhat cooler burns by the resulting vegetation type. Several burns of different ages occur and the regenerating forest can be seen at various stages of succession. In some parts of the wilderness it is possible for the watchful hiker or rider to view the full sequence of forest pregression, from recently burned (with pioneer herbs such as fireweed) to young pine forest, to the climax spruce forest.

In a wilderness such as Burnt Timber-Waiparous, fires must be viewed not simply as a negative thing, but as a vital agent in the area's natural ecology. It is the action of fire in burning old growth stands on the front ranges and in the lower foothills that has opened up new browse areas for wildlife. The abundant



wildlife populations so typical of the Burnt Timber-Waiparous would be considerably reduced had the area escaped from fire. Most slopes would now be covered in dense spruce forest with little forage for wildlife. Walk through the new burn on the North Burnt Timber, watching and feeling with sensitivity. Then ask yourself whether fire in the forest is quite the demon it has so often been made out to be.

To be certain, if you are a forester concerned only with wood fiber production, a fire can greatly affect your operations, destroying a resource that would otherwise have substantial dollar value. But, if you take a broader view of the role of our Forest Reserve lands, then periodic fires, especially on lands marginal for timber production may be a positive tool, improving wildlife range and preventing large build-ups of fuel that often accumulate to dangerous levels in a maturing conifer stand.

However, the suggestion that a place like Burnt Timber-Waiparous is a land controlled by fires does not imply that humans should cease to worry about causing forest fires. Here, as everywhere else, the traveller should be extremely careful with campfires and smoking, for uncontrolled wildfires can cause loss of life and property damage. Nature is effective enough without added assistance from careless humans.

The western portion of the Burnt Timber-Waiparous is of interest to the rock climber-mountaineer. By far the most popular peak is the Devil's Head Mountain. This peak was first climbed in 1925 by J. Hickson and R.S. Crosby, although the first attempt was made back in 1891. The steep faces on the mountain still continue to offer an outstanding mountaineering challenge and it is likely that several new routes will be pioneered on this peak over the next few years. Many of the unnamed peaks along the present east border of the Ghost Wilderness Area remain unclimbed. The complexly folded system of these east-facing escarpments should lure many an adventurous climber.

Boundaries of the 139 square mile Burnt Timber-Waiparous Wildlands Recreation Area have been designated not only to minimize conflict with extractive resources but with other recreational uses as well. The Ghost River Road is not included in the recreational wilderness so that hikers and mountaineers can drive up the Ghost River Truck Trail to Devil's Head and to reach the boundary of the Ghost Wilderness Area. As well, the jeep road on the east side of Burnt Timber-Waiparous (Fallen Timber Creek-Waiparous-Johnson Creek-Black Rock Mountain Pass) has been excluded to allow four-wheel drive and trail bike enthusiasts the continued opportunity to travel this popular route.

Beyond simply being an excellent recreational wilderness area, the Burnt Timber-Waiparous also acts as a buffer to the Ghost Wilderness Area, an ecological wilderness, and the Class I (Special Area) zone of the eastern part of Banff National Park.

# BURNT TIMBER



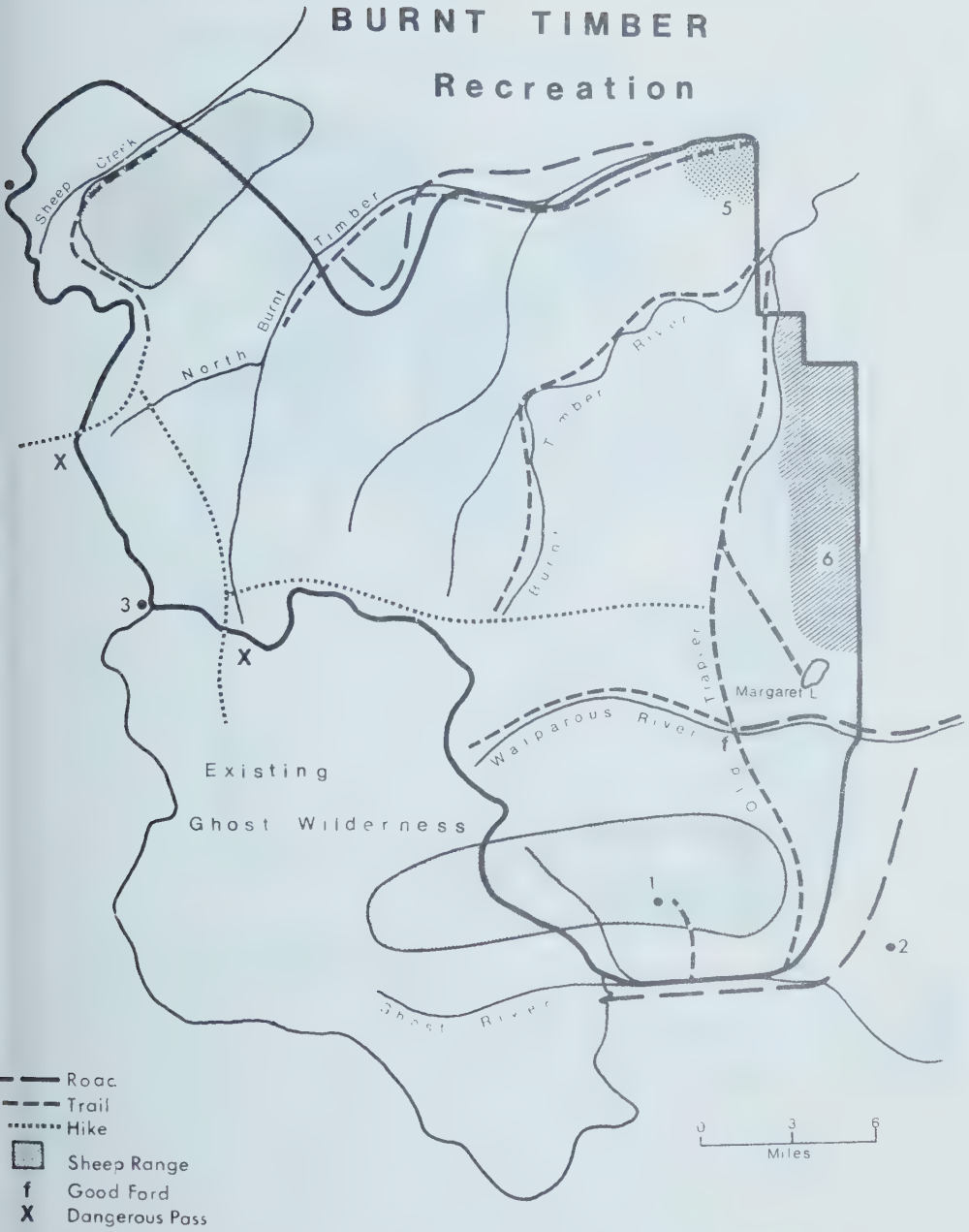
BURNT TIMBER-WAIPAROUS

Points of Interest

1. Devil's Head
2. Black Rock Mountain
3. Mt. Oliver
4. Otuskwan Peak
5. Recent burn
6. Muskeg - small sloughs, excellent moose country



# BURNT TIMBER Recreation



# BURNT TIMBER - UPPER WAIPAROUS

## Forest Composition



# BURNT TIMBER

## Protection Forest



265-34

BURNT TIMBER

Cattle

Grazing

Allotments



Panther  
Corners

1155 AUM

McCue Creek  
700 AUM

Burnt  
Timber  
700 AUM

Upper  
Fallen Timber  
900 AUM

Ghost  
River  
Wilderness

Ghost River  
1850 AUM

Devil's Head  
2100 AUM

Leseur  
Creek  
650 AUM

AUM- Animal Unit Months

# BURNT TIMBER



## QUESTIONING BY THE AUTHORITY

DR. TROST:

The Authority will defer questioning until the open discussion period on Thursday.

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SUBMISSION ON INTEGRATED LAND USE  
AND RESOURCE DEVELOPMENT

in the

EASTERN SLOPES

Presented By: A. Rytz

This document is submitted by the Alberta Forest Products Association which is an organization composed of corporations and individuals engaged in the manufacture of forest products. The membership is composed of 80 member mills and represents over 95% of the lumber production in this province.

Virtually all members are Quota Agreement holders or holders of Forest Management Agreements entered into with the Government of Alberta. Generally both are for 20-year periods and are renewable at the discretion of the Minister (of Lands & Forests) provided the agreement holder has fulfilled his obligation to Forest Management in a responsible way. Both the Government and Agreement holders or licensees employ the services of foresters who are qualified by education and experience to manage these forest lands on behalf of the owners and licensees. A forester's training in silviculture enables him to understand the Forest Ecology.

This Association in 1964, after a number of years of discussion and consultation, submitted a brief to the Provincial Government entitled "The Disposal of Crown Timber and Forest Tenure in Alberta". In this document we proposed long term planning in the administration of the forest resource to establish a firm program of sustained yield forest management based on a secure system of forest tenure that would allow those utilizing the timber resource and government who is the administrator

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of this public resource to work jointly on such a long term planning program. We must compliment government and industry for agreeing at that time to formulation of policies which resulted in the "Quota System" being established in 1966.

Prior to that time, we experienced economic development in a timber harvesting industry at the expense of protection of the environment in many instances. The security of tenure afforded by the Quota System and Management Agreements now requires responsibility of the forest industry for establishment and maintenance of the resource as well as harvesting. Generally effective resource management requires the harvesting of crops such as timber to maintain a productive system and a suitable environment. Such a system has been established and is functioning.

Generally our forest areas in this Province suffered to a much greater degree in past decades because of inadequate protection from the scourges of fire than from the old timber harvesting policy. We feel that measures taken over the last 15 years presently have this hazard in relative check.

This industry has always paid its way in taxes, direct charges as stumpage and royalties, land rentals, fire protection taxes, and other costs in its attempts to meet its number one objective ..... to operate at a financial gain.

In addition we now pay forest management costs to maintain this renewable resource for integrated and multiple use on forest lands realizing that there are conflicts to be encountered with the desires of society. We accept the fact that the 'Well-being of Society' is becoming an equally important objective to be met. However, our industry as any industry, must continue to be an economic success to carry out the wishes of society.

We as a forest industry pay for our rights to the public resource. Should this concept not apply to all users of natural resources?

Positive action has been taken in management policies in areas such as cutting programs, road construction requirements, fire protection measures, regeneration systems, which are all areas where a solid industry-

government partnership is bearing positive results not only in wood fibre production of our timber lands, but also in water, game production and other products.

Short term objectionable effects, basically aesthetic, such as clear-cutting patches, can be justified when they are properly done and generally result in an improvement of the area from its original state. Certainly the aftermath result of fire or insect attack on an over-mature decadent stand has little to offer aesthetically or productively.

Performance by the forest industry in these areas has been established, is working, and no doubt will be improved on as time progresses. Some of the performance is required by public demand, some by the job at hand - the necessity to grow wood fibre. The results will be two-fold:

- hopefully to develop public confidence in our ability to manage this resource

- to increase productivity on forest lands while providing benefit to other users.

To name a few: access is provided for recreational uses, game is more abundant in a growing forest, a regulated water supply is maintained, and grazing areas can be maintained.

We do support the concept of Wilderness areas but we do insist that their size is the governing criterion.

Most of the public recreational needs can be supplied by a multiple use policy. Sufficient single use land exists in this province and should satisfy pressures for the remainder.

Projecting population increase, we must look at the question of balance of use of the land we have. Setting aside enough land to provide single use to supply all needs is inconceivable. European countries have been forced to accept this philosophy of multiple use because of population density, with effective results.

Projections to the year 2000 of potential timber demand on this Continent alone, point out that any areas suitable for commercial timber growth on a sound managed basis are essential for the well-being of society.

One of the most significant single factors to date, leading to the improved condition of our forest lands, is the reduction of forest fire losses. Timber management processes are able to keep these lands in a productive state. Multiple use means increased traffic - people use, an increase in hazard which points to the necessity for regulation and education of the traffic.

Our greatest concern in establishing and growing these stands is their protection from fire. The hazard of increased use and traffic must be controlled and regulated.

The growing and harvesting of timber from our productive forest lands is a vital and necessary function for our way of life and to our economy.

I'm sure that an audience as that here today can appreciate the fact that proper integration of various uses with due regard for their order of importance can, and will, achieve the greatest benefit from these lands for the people of this province.

We, in the Forest Industry, have accepted Forest Management for sustained yield, integrated and true multiple use! Who else?????

June 19, 1973

## QUESTIONING BY THE AUTHORITY

MR. KINISKY:

Are you advocating that there be access to all the areas of the eastern slopes for purposes of the forest harvest?

MR. RYTZ:

No, I spoke of productive forest lands. I think within the management units presently established in the eastern slopes there are quotas established and we trust that these will be maintained.

MR. KINISKY:

But are you suggesting that where there are marketable stands of timber, regardless of what portion of the eastern slopes they are in, the forest industry would like access to them?

MR. RYTZ:

I would think so.

MR. KINISKY:

A major complaint against the forest industry, when it is carried on in a multiple land-use area, is that it creates too many access roads allowing too many people to get in too easily with too many motorized vehicles. Is there some way by which the forest industry could overcome this particular objection?

MR. RYTZ:

It's very difficult in an extractive process not to have access roads.

MR. KINISKY:

As many as you use?

MR. RYTZ:

I don't think we build any more mileage than is required.

MR. KINISKY:

You mentioned some of the concerns the industry has with hazards and the necessity for controls respecting increased traffic and people use. How do you propose to implement such controls?

MR. RYTZ:

There may be the need for additional restrictions other than what is covered presently in The Forests Act at certain high hazard periods.

MR. DOWLING:

What are the advantages and disadvantages of selective cutting of marketable timber as opposed to clear cutting?

MR. RYTZ:

Generally our stands in Alberta are basically of fire origin, they are even-aged stands. Our cutting programs are designed accordingly, the clear cutting concept. I don't believe that a selective cutting type of program in our native stands is the proper treatment.

MR. DOWLING:

Why?

MR. RYTZ:

Because they are all even-aged stands and if you use too long a period on a selective cut you run into overmaturity and a decadent stand by the time you get around to the second or third cut.

DR. TROST:

You suggest that multiple use is a sensible basis on which to go forward, but that in some cases one might have to employ selected multiple uses. Is coal mining compatible with forest utilization?

MR. RYTZ:

As I understand coal mining it doesn't occupy a large area so probably it would not create a problem.

DR. TROST:

Would you elaborate on your statement that since the forest industry pays for its access to the public resource, this should apply to all users of natural resources.

MR. RYTZ:

I think most extractive industries pay various fees. With the high intensity of recreational use and other use for areas we may be approaching the time when we may require some toll or charge to maintain the cost of operating these other uses.

DR. TROST:

Would you suggest that might be the case for recreational use?

MR. RYTZ:

Yes, it's possible.

DR. TROST:

As you know, the Eastern Rockies Forest Conservation Board, which existed as a joint federal-provincial agency for many years, was disbanded this year. It had come to the end of its term. Do you believe that such an agency should be reconstituted?

MR. RYTZ:

I don't know whether I have any opinion on that.

DR. TROST:

The forest industry could get along without it?

MR. RITZ:

Yes. I think it performed a valuable service in other areas.





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A CONCERNED VIEW  
OF  
OUTDOOR RECREATION  
AND  
THE FOREST RESERVES

A  
BRIEF  
to  
ENVIRONMENT CONSERVATION AUTHORITY  
East Slope Hearings  
at  
Calgary, June 18, 1973

Submitted by:

Brian Kregosky, Graduate Student  
Department of Geography  
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A CONCERNED VIEW OF OUTDOOR RECREATION

and

THE FOREST RESERVES

Many people consider that the only effective relief from the hurry and tension of modern life is to be found in the woods. There can be no doubt that the use of forests for recreation will be subject to still further increase as time passes, and that still further facilities for public enjoyment of the wooded areas will be required. The tendency is one to be encouraged by the forest administrator...

J. Harrison

Forests and Forest Industries  
of the Prairie Provinces,  
Department of Interior, 1936.

INTRODUCTION

The Forest Reserves of Alberta's east slope, comprised of the alpine and sub-alpine physiographic regions, are landscapes containing various resources of public value. Increasing demands for the use of these resources, be they consumptive or appreciative demands, necessitate wise allocation and, therefore, wise administrative decision-making and management. Unfortunately, the past record shows this not to be the case as agency efforts have been weighed heavily towards the commercial, or economic, use of a few resources to the virtual exclusion of others. Indeed, there will continue to be a broad user range of east slope resources but in view of the increase of urbanization, mobility and leisure, and social attitudes the most extensive and dominant future problem, I believe, will not only be determining the most efficient allocation of land throughout the consumption-preservation continuum but in allocation of land between low and high density recreational users. An under-nourished infant of the Alberta Forest Service's multiple-use family planning, recreation has finally come of age and requires, if not demands, rehabilitative therapy. Because recognition of recreation as an 'adult' (i.e. major use)

is long overdue, and in order to provide some suggestions for parental guidance to respective agencies this brief will use outdoor recreation as its theme.

#### ADMINISTRATION AND MANAGEMENT

Recently, the Provincial Government, has opened its eyes to the value and demand for outdoor recreation. Forestry road pavings, a tripling of the Provincial Parks Division budget and optimistic tourist projections indicate agency awareness of recreational trends. Research such as the Foothills Resource Allocation Study and the Alberta Recreation Plan Study are a start towards a balanced use of public lands. The past lack of basic knowledge of the resource in terms of its recreation capability still is evident in the absence of inventories, land classifications and master planning. Management constraint in recreation was a direct result of Eastern Rockies Forest Conservation Board policy. The Alberta Forest Service, Recreation Manual, an obsolescent and antiquated statement from 1964 has not been updated and does not recognize the many activities other than hunting, fishing and camping. Their responsibility is solely for the car camper as "the development of forest recreation areas will be primarily for construction of rustic picnic and camping facilities for the travelling public...". Past performance bears this out. The Recreation Manual is, in actuality, a manual for the location, siting and construction of roadside campgrounds. And the designation of these campgrounds as recreation areas in the manual and even on current A.F.S. maps is a misnomer which shows lack of sophistication in recreation. They are, instead, recreation sites with little or no planning and no integrated management with the surrounding area to optimize potential activities. The only valid recreational areas within the Forest Reserves are the three wilderness areas, Wilmore Wilderness Park and Entrance Provincial Park--the other 103 'areas' being facility oriented campsites. Eighty-one campsites are maintained by the A.F.S. and the remaining 22 by the Department of Highways.

The status of budget and personnel in the responsible agency is further indication of the past low priority given recreation. There is a recreation coordinator and one or two recreation officers, surely only a token gesture by forest management. The latter are not especially trained for recreation planning and management, having been promoted within the ranks. They are representative of the narrow-minded, traditional forester role. In most areas,

recreational decision-making is done by the land use officer who often is faced with compromising situations. In 1970 the Bow Forests Recreational Officer stated there was no problem with, nor need to cater to, snowmobilers but demand forced the 1971 implementation of a trail--an indication of demand dictating the measurement of the area resource. Optimally, this order should be reversed. Without proper policy, master plans and management guidelines concerning recreation, decisions and use will continue to be after-the-fact and piecemeal.

A comprehensive policy statement regarding outdoor recreation in the Forest Reserves is long overdue. It should recognize the direct (to the user) and indirect values (societal benefits) of recreation and consider recreation as equal to, if not more important than, other traditional uses. (The recreational and scenic uses of forests are stressed in the United States Multiple Use Act of 1960). Only with this policy base can the recreational resource be optimized through the land classifications and zoning of planning, and the regulations of management. To illustrate, if \$20,000 can be spent on grading 5 miles of lookout tower road and 'research' can be expended to modify monsoon buckets (Lands and Forests, Annual Report, 1971) then funds should be made available for more recreation research and management that, in future, will hopefully be operated under an enlightened recreational policy. Consultants may be necessary to help with a 'catch-up operation' before use pressures become too great. The Public Advisory Committee to the Department of the Environment recommendations provide far-sighted guidelines for administration.

Basically, the lack of recreational awareness demonstrated by administration and management over the years, is a direct result of the traditional role of the forester. Consumptive oriented, he has been lead to view himself as actualizing the forest resource for its dollar value. The time is well at hand in Alberta when forest recreation must take its place alongside the other specialist fields of the forestry profession. Benefits, such as wiser use of the resource, minimized conflicts with traditional uses and maximized recreation values, will certainly follow such direction. There is a demonstrated need for a centralized recreation research and planning team within the Department of Lands and Forests as well as the need for fully qualified and dedicated recreation managers in each of the five forest headquarters.

#### DEMAND

Outdoor recreation volumes are increasing throughout the nation. Past forecasting has usually fallen short of actual figures. The U.S. Outdoor Recreation

Resources Review Commission in 1962 estimated that outdoor recreation would triple by the year 2000 and that demand for wilderness activities would increase tenfold. The popularity of wilderness recreation is approaching saturation in certain areas of the Mountain National Parks and a spill-over onto contiguous Forest Reserve lands is likely. Development of the recreational corridors at Canmore and the Bighorn area will further place the user, both resident and tourist, in close proximity to the resource. Airfields, proposed for Canmore and Hinton will do likewise. Future paving and upgrading of the David Thompson Highway (estimated 1975), entire Forestry Trunk Road (no date) and other forestry access roads is perhaps the most important factor for future recreational use of the forest reserves, other than the quality of the resource itself. Aware of these indications, Travel Alberta can be seen casting its eye to the untapped potential of Alberta's east slope.

#### ACCESS

Access to the Forest Reserves and to areas of activity, as well as major regional route possibilities, will be a determinant factor of future use volumes. When analysed along with the quality of areas for certain activities it should be possible to predict zones of heavy use. There is presently over 4,000 miles of forestry roads. This network, with upgrading, is sufficient to serve future needs. An analysis shows that, between the Athabasca River (#16 highway) and the International Boundary there is only one Forest Reserve area (Job Creek-Brazeau River) outside of a 20 mile zone from main forestry roads! The use of minor roads in such an analysis would place almost all of the Reserve area within 10 miles of road access.

It is obvious that road systems serving the Rocky Mountain wildlands will continue to be upgraded. The David Thompson has been projected for 1975 while the Forestry Trunk Road will undoubtedly be paved through its 640 mile length. In view of a 'systems approach' to access it is thought that the only other paving in the Reserves be the few main east-west linkages such as Pincher Creek to Beaver Mines, Claresholm to Old Man River Gap, High River to Highwood junction, Sundre to James River, and Drayton Valley to the Pembina River. Thus, east-west paved main access coupled to north-south paved routes such as the Elk Valley Road in B.C. (future paving), Forestry Trunk Road and Banff-Jasper Highway would create a number of circuit route possibilities. The forestry roads of this system should further be upgraded and designated as scenic-recreational routeways. Standards would correspond to that main use in order to provide a variety of scenic experiences.

The example of the Kananaskis road upgrading demands a scenic road policy statement for the entire Trunk Road with the government specifying which sections will deviate from these standards in catering to future resource developments. Aside from recreation viewpoints, pull offs and campsites, impact, such as gravel borrow pits, must be kept from view. (It is interesting to note that as far back as 1962 the north west U.S. Forests had a high mountain policy that included Landscape Management Areas along recreational travel corridors. Under this policy upper elevation forests are managed primarily as amenity areas, without timber harvesting). Properly planned these recreational road systems will be able to handle higher volumes of use. It will satisfy the majority user who recreates by the seat of his pants as well as help to keep the use-levels moderate in backcountry areas.

If millions of dollars can be spent on the lame duck 'Alberta Resources Railway' then some budget should indeed be allocated to 'Alberta Recreational Routeways'. They will carry and route an enormous amount of traffic in the future and can be used in long range planning as an effective tool in distribution of use within certain recreational corridors.

#### Land Classification

In the past, lack of a comprehensive recreational policy and thus little far-sighted planning meant no recognition of the need for a recreational classification and zoning of provincial lands on the east slope. Apart from three designated wilderness areas and various roadway campsites the remainder is not zoned, being allocated to various non-recreational leases, and reservations.

The Eastern Rockies Forest Conservation Board, whose forte was watershed management, acknowledged a simple zoning scheme which corresponded closely to their watershed zones. Thus, the headwaters zone equated with a primitive recreation zone, the intermediate zone with multiple use and the valley zone with the recreation development zone. Other unit guides replace the primitive with a wilderness zone but it is seen to contain roads and lumber operations and thus illustrates an academic exercise carried out without adequate knowledge of type criteria. It is doubtful if these zones received respective management inputs in view of the low policy priority afforded recreation by the E.R.F.C.B.

Government recognition of the need for classification and zoning is slowly surfacing in, for example, the 'controlled buffer zone' of the Wilderness Areas Amendment Act (1973) and the Department of the Environment Acts 'restricted development zone'. These show some awareness but are only a day-by-day, piece-



meal approach to the uses and problems of land use and emphasize lack of a policy base. Furthermore, the buffer zones have not been implemented in any <sup>Wilderness</sup> area.

Increasing recreational use of the east slope is challenging traditional forestry concepts and creating new management problems. As preservation of the land is a basic objective, the purpose of land classification is to allocate those uses compatible with, or best suitable, for certain areas. With a recreational classification the designations would depend on the use types (activities) and corresponding physiographic/ecologic areas. It is possible in this way to protect the landscape by limiting overuse and dispersing use to other areas thereby maintaining the quality of the activity. There will be an increase of areas classed, or zoned, as single or special use in the future even if under the multiple-use management concept. (The Canadian Institute of Forestry Forest Land Policy Statement, 1971, recognizes this present necessity of single use areas).

If the responsible agencies are going to recognize the future recreational fact and also plan for consumptive uses a comprehensive land classification system is necessary. Figure I summarizes various existing schemes.

Taking into consideration the quality and variety of the recreational resource, past uses, present legal designations and future use implications the accompanying classification scheme for the provincial east slope lands is offered (Figure 2). It must be emphasized, however, that any land classification should take into account present and potential uses of adjacent British Columbia and National Park lands. It is comprised of four classified areas which can be divided into 11 sub classes. Other legally designated areas, not necessarily found in the East Slope area, can also be accommodated in this system.

#### DESIGNATED AREAS

##### Wilderness Areas

While the value and need for wilderness designations will remain a somewhat emotional issue with the user and a threat to the 'dollars-returned' minded manager it is a fact that, since passage of the two wilderness acts (Bills 67 + 93) the same wilderness areas now comprise only 55% of their original areas. All the deleted area of 318 square miles was in the White Goat Wilderness. Use criteria of the Act, better left perhaps to regulation by management, have been responsible for the deletion as there are no potential resource con-



licts in the area. The resultant face saving concept of controlled buffer zones was born of expediency and, in fact, has not been applied to the White Goat de facto wilderness (deleted area) nor to any lands surrounding the Siffleur or Ghost Wilderness. Its degree of protection is limited because only surface mining operations would be prohibited. The restricted development zone of the Department of Environment Act (section 15) is potentially more protective.

Dr. J. D. Ross, the past Minister of Lands and Forests indicated the governments predisposition as to size when he stated in Alberta: A Land for Living, "The purpose of the Wilderness Areas Amendment Act is to retain and establish modest sized areas..." (underlining mine). The previous 144 square mile limit did, and now restrictive use criteria, will effectively accomplish this.

Government activity with regards to wilderness now indicates unconcern. There has been no announcement of candidate study area proposals forthcoming, either within the Forest Reserves or on other provincial public lands. Unfortunately, because of the absence of a review clause in the Act, the responsible agencies need not propose areas but need only await suggestions from the private sector. The Wilderness Advisory Committee's demise further hampers public agency progress on new areas. This Committee's recommendation that the boundaries of the Siffleur Wilderness be extended to the south bank of the North Saskatchewan River has yet to be implemented. Undoubtedly, while a wilderness system should retain areas in all physiographic areas of the Province there remain some critical high-quality areas, such as the Upper Kananaskis Valley, within the east slope deserving of legal sanction. (The Alberta Wilderness Association is proposing a number of these at the Hearings).

As a comparison, the United States Wilderness Act of 1964 (PL 88-577) required a review of all Federal lands exceeding 5,000 acres for their suitability and possible inclusion into the Wilderness System. This has a 10 year planning period. Furthermore, candidate study areas were protected by Presidential order from all incompatible uses during the review period. Regions long managed as primitive areas formed the bulk of the review lands. This legislation allowed for future planned expansion, mainly because wilderness values were recognized as vital to the Nation, and the 54 originally designated areas have grown to 91 wilderness areas in 1972.

Figure I

| <u>RECREATIONAL LAND</u>                                                                     |                                                                                                                                                                                                                       |
|----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sample                                                                                       | Classification Systems *                                                                                                                                                                                              |
| U.S.A.                                                                                       | <u>New Zealand</u>                                                                                                                                                                                                    |
|                                                                                              | Scientific Area<br>Wilderness Area<br>Natural Environment Area<br>Development Area<br>Ontario Provincial Parks<br>Primitive Zone<br>Natural Zone<br>Historic Zone<br>Multiple Use Zone<br>Intensive Recreation Zone   |
| Alberta Provincial Park Types                                                                | <u>British Columbia Park Types</u>                                                                                                                                                                                    |
|                                                                                              | Nature Conservancy Area<br>Class A park-single use recreation<br>Class B park-multiple use<br>Class C park-regional recreation<br>E.R.F.C.B.<br>Wilderness or Primitive Zone<br>Multiple Use Zone<br>Development Zone |
| Scientific study and outdoor recreation park<br>Outdoor recreation park<br>Multiple Use Park |                                                                                                                                                                                                                       |

\* Various Sources

| Area Class                    | Area:Sub Class                                                                                                                                                                                                         | Recreation<br>Top                                                                                                                              | Priority Use                                                                                                                          | Recreational Activity                                                                                                                                                                                                               |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Wilderness Area               | 1.Designated wilderness areas<br>(Bill 93)<br>-no resource conflicts<br>-no sign of man, roadless<br>2.De facto wilderness areas<br>-satisfy wilderness criteria<br>-not legally designated<br>-few resource conflicts | Highest<br>Quality                                                                                                                             | White Goat<br>Wilderness                                                                                                              | Single use recreation<br><br>all traditional<br>primitive recreations<br>use                                                                                                                                                        |
| Wildland Rec-<br>reation Area | 1. Primitive & backcountry areas<br>-roadless<br>-show little activity of man<br>-few resource conflicts<br>2.Backcountry areas<br>-some sign of man<br>-management roads<br>-some resource conflict                   | High<br>Quality                                                                                                                                | Upper Kanakas<br>Kis Valley<br>South Ghost<br>area                                                                                    | Primitive recreation<br><br>all traditional<br>primitive recreations                                                                                                                                                                |
| Multiple Use<br>Area          | 1. Various forest reserve areas<br>-resource development is major<br>use<br>2.Various levels of roads<br>-single use resource develop-<br>ment<br>-developed roads                                                     | Low to<br>Moderate<br>Quality                                                                                                                  | Racehorse<br>Creek<br>Area                                                                                                            | extensive resource<br>harvesting<br><br>Roadside recreations,<br>A.T.V., snowmobile<br>areas                                                                                                                                        |
| Travel Corridor<br>Area       | 1.Designated scenic routeways<br><br>2.Undesignated (potential) scenic<br>routeways<br>3.Other access corridors<br>4.Developed recreation<br>5.Major developed recreation                                              | Moderate<br>to high<br>quality<br><br>Moderate<br>to high<br>to mod-<br>erate<br><br>Moderate<br>to high<br><br>Moderate<br>to high<br>quality | Forestry<br>Thunk<br>Road<br><br>Sheep-Elbow<br>Caroline<br>Access road<br>Goldeye<br>Youth Camp<br>Snowridge<br>Odyssey Pro-<br>gram | vehicular and facil-<br>ity recreation<br><br>vehicular and facil-<br>ity recreation<br>multiple use<br><br>Intensive recreation<br><br>Intensive recreation<br>single use sites                                                    |
|                               |                                                                                                                                                                                                                        |                                                                                                                                                |                                                                                                                                       | vehicular & associated<br>activities (Intensive)<br><br>vehicular & associate<br>activities (Intensive)<br>usual activities<br><br>group and institutional<br>camps<br>facility oriented and<br>tourist areas, i.e., ski<br>complex |

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\* Provincial and regional parks, natural and historic areas, and scenic rivers can be accommodated in above system at the level dependant on their own classification criteria.

It is recommended that a similar strategy be initiated by government in a comprehensive review of roadless areas over 5,000 acres within the Forest Reserves. Depending on satisfaction of wilderness criteria and suitability these areas can be then designated as wilderness, natural or provincial park areas or allocated to other land classification categories.

The Wilmore Wilderness Park, created under specific legislation is neither a legal wilderness or provincial park. Since designation in 1959 its economic resources and subsequent development have resulted in the following series of size reductions:

|                                 |                   |              |
|---------------------------------|-------------------|--------------|
| 1959 - Chapter 95 -             | 2149 square miles |              |
| 1963 - Order in Council #1554 - | 2062              | square miles |
| 1965 - Order in Council #1234 - | 1775              | square miles |
| 1970 - Chapter 392 -            | 1775 square miles |              |

There are no legal constraints for future deletions of the Willmore. It will be necessary to reclassify its area to wilderness and provincial park status in order to protect the vast recreational resource. Of course, certain parts outside these recreational reserves will be allocated for resource development.

#### Provincial Parks

The Provincial Parks Division has finally assumed its responsibilities in the past few years - the park system is averaging an addition a year (40 in 1961 to 52 in 1973). Unfortunately, the average size is 2708 acres with over half of the parks (27) less than 500 acres in size. The recently announced Parks Policy (Position Paper #13) recognizes the need for larger parks and this has implications for the public lands of the east slope.

The following criticism is necessary however. There is no provincial park now in existence that is representative of the alpine ecological zone (wilderness areas are not parks). Furthermore, only three (Entrance, Bow Valley, Police Outpost) parks are located in true sub-alpine zones. (The Parks Division does not differentiate between these ecological zones but groups them under a foothills zone). Of the 52 provincial parks only Entrance is located within the provincial Forest Reserves. The need for various types of provincial parks within the Reserves and especially representative of the cordillera physiographic region is of immediate concern. The stated need for larger parks is easily satisfied by allocation of suitable primitive areas for this purpose. If British Columbia can expand their park system by over

one millions acres in one year Alberta can surely classify quality east slopes areas as new provincial parks. The fact that it is Crown land and thus will not create financial problems should facilitate such a needed expansion within the Forest Reserves.

A proposal for a new provincial park will be given by this writer at a later hearing.

#### Natural Areas

Likewise, action should be taken by the government to establish an inventory program in order to identify unique ecological and geological areas, within the entire province as well as the east slope, for consideration as class "C" parks and resultant preservation and protection of inherent values. Certainly, there exists more than the six unique natural areas, presently designated. Expropriation is a valid means to this end, especially in terms of the resource values.

#### RECREATION

##### Recreation Areas

Apart from wilderness areas and one provincial park there are no planned recreational areas in the Forest Reserves. As previously mentioned, the Forest Service recreation areas are a misnomer for campgrounds, or recreation sites. Area designation remains for the necessary far-sighted policy and land classification systems to evolve. (The Ontario provincial agencies' have recently proposed a Crown Land Camping Policy which is intended to regulate camping conflicts and pressure on the land. A fee schedule is incorporated into this scheme). Scenic recreation travel corridors are also anticipated to be included as a type of recreation area. These scenic routeways, as the foregoing proposed classification system noted, will be quite diverse in their quality, resource potential and use and thus they will cater to the entire range of outdoor recreation needs.

##### Trails

There are few planned recreational trails in the Forest Reserves, the responsibility for this type of provision and activity having been left to the neighboring Mountain Parks. The trails, most in poor condition, are historic and old trails of decades past, now deteriorated because of lack of maintenance and subsequent lack of use. A ratio of potential recreation trails to area in the Bow Forest gives a figure of 1:46.3. The lack of provincial

planning for backcountry recreation is obvious in view of the ratio figures for Banff (1:3.3), Yoho (1:2.0) and Kootenay National Parks (1:4.0). Considering there is 4,000 miles of forestry roads and many times that mileage in seismic lines a program of off-road and backcountry trail systems is required. At present the unplanned and unmaintained trails are poorly mapped, are not well known by the manager, are usually unsigned, and exhibit enough diverse blazes to thoroughly confuse the user. Many trails have been put in by outfitters without due regard as to siting, impact and future clientele. For example, the Coral Creek trail, having approximately 24 fords in 14 miles does not facilitate hiking. Seismic lines are not entirely satisfactory for recreation trails. They tend to traverse perpendicular to ridge systems as well as continue along valley bottoms in a straight line necessitating numerous fords. An example of the latter is to be found in the main trail of the Ghost Wilderness.

With some maintenance and planning there are many trail system possibilities in the backcountry areas that can be tied in with existing National Park trails on the west and access corridors on the east. (Two such trail systems are being proposed by this writer).

#### Developed Recreation Areas

While Agency-created recreational areas, likely undeveloped backcountry, may materialize in future, proposed private recreation developments are likely in the major travel corridors. As mooted in the 1971 Public Hearings on National Parks and 1972 Village Lake Louise Hearings the logical and inevitable location of resort complexes and service centers are in the main corridors adjacent to the Parks. It will be up to the government to decide what proposals are most suitable in terms of long-range demands and planning. It is most important to initiate planning and zoning of the adjacent wildlands in the Canmore and Bighorn corridors in order to minimize future impact and maintain land quality. As well, the one major backcountry proposal (Assiniboia) does not need 7,000 acres to carry out its facility-oriented recreation. Instead, lands surrounding the development should be zoned according to their capability for recreation.

#### Conflicts

The many recreation development proposals in the Canmore and Bighorn corridors indicate that these lands should be zoned for recreation use. The recent approval of a new cement plant in the former is unsuitable in view of long-term use requirements.



Future resource extraction should be planned so as to minimize impact on the land as well as the enduring scenic resource, especially in high quality corridors such as the Kananaskis area. For this same reason scenic travel corridors need to be designated in the future and contain roads of compatible design. If resource extraction is envisaged using sections of these scenic routeways this conflict should be incorporated into initial master planning.

With increased future use in the Forest Reserves it is obvious that grazing will conflict with the more legitimate wildlife resources and traditional recreational uses. The incompatible use of grazing is basically a subsidized commercial activity on Crown land--a token return of only \$72,000. came from 265 leases in the Green Zone and allowed the grazing of 24,856 head. The 1971 Annual Report of the Department of Lands and Forests states that the "...open grassland areas of Alberta are fully utilized and therefore the wooded areas of Alberta provide the only new native grazing available". Administration somehow forgets that these same wooded areas provide the only available native grazing for native wildlife. This is the same wildlife that accounts for income in the form of game permits and outfitter fees as well as provides appreciative viewing values for the non-hunting recreationist.

The high density of seismic line systems throughout the east slope are a potential conflict with recreation. While a few may have some facility as foot or horse trails, and A.T.V. or snowmobile trails, ninety nine percent should be allowed to regenerate. In many cases they allow vehicular access up to prime alpine areas thereby eliminating the buffering effect of distance. The result could be a density of use in excess of the carrying capacity of these fragile areas and a resultant deterioration in both activity and resource quality. The judgment as to possible use of seismic lines for recreational purposes will have to be on an individual basis and within the parameters of access zoning of a master plan for each forest. For example, it has been noted that the seismic line trail of the Ghost Wilderness frequently crossed the river and the many fords make it an unacceptable, low capability trail for hikers. Seismic lines in many regions cut trending ridges perpendicularly and the resultant up and down profile is unacceptable for access. Some lines, such as along the upper Brazeau River can be used as access trails but offer aesthetic constraints in terms of large slash widths and lengthy straight-line



highway-type corridors. These would be more acceptable to horse travel than foot travel, the variety of the micro-landscape being somewhat monotonous. In general, the main constraint for the use of seismic lines and the source of conflict with recreational use will be the impact on landscape scenery. A future management objective should be vegetative regeneration in order to erase most of these eyesores.

While some future resource extraction-recreation conflicts will occur in future they will be minimized through land classification and wise zoning before the fact. These two methods should also be used to eliminate, as much as possible, future inter-recreation conflicts.

Conflicts between the various recreational activities could be a major use problem in future recreation use of the Forest Reserves. Present ski-tour-snowmobile and A.T.V-hiker conflicts need not occur if the above planning methods take all present and potential uses into account. Areas should thus be set aside for the range of compatible activities that they demonstrate high capability for. Management regulations can also serve to reduce recreation conflicts.

In order for these regulations to be effective the user must be made aware of their existence and their enforcement. Many use areas of the forests contain accumulations of garbage from a range of backcountry clientele that have built up over the years in the absence of enforced regulations. The 1972 Alberta Wilderness Association litter clean-up of certain White Goat Wilderness areas indicate a campsite garbage problem. It can conflict with the purist's wilderness experience. During thesis field research it was seen that much garbage accumulated over the years still remains in remote areas of the White Goat de facto wilderness. It consists of tree blazes and campsite garbage from horse users as well as 50 gallon fuel drums from past geologic exploration. These examples of impact will be conflicts if the area is more heavily used in future.

While sewage and site factors of large recreational developments may be possible sources of conflict with watershed management objectives, extensive forms of non-facility oriented outdoor recreation create no conflicts with this priority use. Recreational land designations and zones will, in fact, offer complementary use and further protect this resource.

#### Management

This brief has implied a demonstrated lack of comprehensive recreation management within the Forestry Reserves. This fact is attributed to the low priorities of the past decades which have been put on recreational use of the

forest resource--low priorities due chiefly to policies of the Eastern Rockies Forest Conservation Board.

Management has been restricted to the consumptive recreations and to facility-oriented roadside activities. The lack of recreation officers has meant responsibility for recreation, a full-time job, has usually been the duty of the land-use officers. Thus, some recreations and areas have received but token gestures, especially in view of past policy and administration strategies towards resource utilization. Rangers, having various other duties, are not able to journey into backcountry areas to carry out field checks. Personnel with whom this writer is familiar have only visited these areas in the process of precipitation gauge checks or helicopter fly-overs. As a result they have only a general impression of distribution and volume of use, trail conditions, overgrazing and other impact. Maps show few actual trail locations. The user of remote wildlands is, in a sense, left on his own and this recreational climate will not bide well with safety considerations for future use. This is further emphasized by the lack of required registration for such activities as climbing and overnight trail use.

The more advanced recreational backcountry management of the National Parks can offer many guidelines for future Forest Reserve management. In view of the tremendous upsurge of backcountry and wilderness use in the last few years, and projections of continued increases, the United States Forest Service has demonstrated the most refined management strategies in attempting to regular and cope with increased use in order to maintain the quality of prime recreation areas. The following are offered as an indication of what may, in future, be tools for management in Alberta's east slope Forest Reserves:

- permit system in popular areas requires user registration and provides a data base for research and management. This system, started in 1971, is now computerized.
- this system is designed to regulate use levels and prevent over-use. Trails are closed when use limits are reached.
- these heavy use areas have designated campsites which contain a specified number of sites, and wood fires are banned in high areas.
- reservations are required in some parks and wilderness areas.
- protective measures include campsite rotation, elimination of cattle grazing and specified access routes.

- wilderness quality is also being retained, or in some cases salvaged by removal of existing improvements such as tables and fireplaces.

There now exists an improved climate and increased opportunities for new management direction of the recreation resource within the provincial Forest Reserves. One can only hope that it will be realized for the sake of the future user and for preservation of the resource.

#### CONCLUSION - THE FUTURE

The creation of a basic administrative policy which acknowledges the benefits and values, both present and future, of outdoor recreation in the Forest Reserves is essential, if not vital. From this base will come research, wise planning and management. This requires inventories of the many recreational resources and will result in the recreational land classification and zoning system so necessary for preservation of that resource for future use. It is expected that within this classification system there will be an increase of areas set aside, by various designations, for the priority use and single use of outdoor recreation. Administrative strategies giving full weight to the recreation potentials, are not only necessary, but long overdue. Only with such an enlightened administrative attitude can the recreational resource of Alberta's Forest Reserves be protected and preserved for future generations.

c.c. - A. Warrack, P. Ag. Minister  
Department of Lands and Forests

## [CHAIRMAN'S COMMENT]

DR. TROST:

I must say, Mr. Kregosky, that your recommendations are, it seems to me, very good. In fact, the last one in which you suggested we have an independent analyst to review the submissions and that we publish them, we thought so good that we did it for our last hearings. We are very pleased to have your comments and we'll look forward to your joining us at the subsequent hearings.

**SUBMISSION TO:**

THE ENVIRONMENTAL CONSERVATION AUTHORITIES -  
PUBLIC HEARINGS BY THE CITY OF CALGARY

**LAND USE AND RESOURCE DEVELOPMENT IN THE EASTERN SLOPES**

Presented By: Mrs. M. Southern

PREPARED FOR THE CITY OF CALGARY BY THE  
PARKS/RECREATION DEPARTMENT  
ENDORSED BY THE CALGARY CITY COUNCIL

**SUBMISSION TO:** THE ENVIRONMENT CONSERVATION AUTHORITY,  
ALBERTA

**FROM:** THE CITY OF CALGARY - PARKS/RECREATION  
DEPARTMENT

ENDORSED BY THE CALGARY CITY COUNCIL

**RE:** PUBLIC HEARINGS ON LAND USE AND RESOURCE DEVELOPMENT  
IN THE EASTERN SLOPES

This submission confines itself to a number of basic principles which we consider to be of concern to a large cross-section of city dwellers living in close proximity to the eastern slopes of the Rockies.

We would submit that the **FUNDAMENTAL OBJECTIVE** must be to **ENSURE THAT THE CONSERVATION OR DEVELOPMENT OF THESE LANDS AND RESOURCES WILL RESULT IN THE MAXIMUM POTENTIAL OF HUMAN HEALTH AND SOCIAL DEVELOPMENT BOTH NOW AND IN THE FUTURE.**

We appreciate that in achieving this objective many political and value judgements are involved. Nevertheless, we consider that there are common norms and values which would for example, rank environmental conservation higher than mineral resource development or surface mining, -- that would rank public wilderness and recreation areas higher than commercial tourism and urban development on these particular lands.

**BASIC RECOMMENDATION:**

We would therefore recommend that as a first goal towards the achievement of the above objective that a **"COMPREHENSIVE ZONING PLAN"** and a **"LAND USE CLASSIFICATION GUIDE"** for each zone be prepared for the eastern slopes and presented to the people of Alberta for their consideration and evaluation.

Such a plan would delineate land use zones ranging from the truly restricted wilderness area as set out in the Provincial Wilderness Act through a series of more man-influenced areas such as Wilderness Parks, Provincial Parks, Forestry Reserves, Tourist Development, Residential Lands, Industrial Properties and Urban Areas.

We recognize that the existing Regional Planning Commissions have done work in this area, however, we would respectfully suggest that a more integrated and comprehensive zoning plan and classification guide is required for the total area of the eastern slopes.

#### **RECOMMENDED PLANNING CONCEPT OF PARTICULAR CONCERN**

The City of Calgary has particular interest in the Bow River Basin, including the Canmore Corridor and in this regard we endorse the following concept:

- (1) The establishment of a Wilderness Recreational Area east of the Kananaskis Highway forestry trunk road of approximately 560 sq. miles, as recommended in the more detailed brief of the Alberta Wilderness Association, date 1972. It is the City's position that this is a desirable proposal, however, in order for it to be a viable proposal, adequate less restrictive Provincial Park Lands must be associated with the area. This park land would provide car camping and similar recreational opportunities around the perimeter. In addition, the Forestry Trunk Road requires upgrading to improve accessibility into the Kananaskis area. We would also suggest that in order for maximum cost benefit to be derived from this area, it will be necessary to develop improved fire prevention security practices which will permit access to these areas during the typical Alberta summer and fall season.
- (2) We would support the improvement of tourist and commercial recreational facilities outside of the National Park throughout the Canmore Corridor.

However, in doing so, we would stress that we consider it essential that a High Standard of Architectural control should be exercised on all developments to ensure their integration into the environment. In particular, we would stress that the natural landscape and scenic qualities of the Trans-Canada Highway, the 1-A Highway and the Kananaskis Highway, be maintained and where possible enhanced.

Utilities and Facilities should be made available but off the Highways. The Service Centres should have access roads with Natural landscaped buffer zones preventing any visual disturbances of the scenery. Where necessary aesthetic signs on the Highway should signify turn offs to Service Centres.



- (3) With regard to the removal of non-renewable resources from the Bow River Basin, we would suggest that new developments in this area should not be encouraged. Further, that the rehabilitation and restoration requirements related to those in existence should be vigorously pursued.
- (4) Concerning the renewable resources such as commercial timbering and grazing lands, a comprehensive zoning plan combined with sophisticated land management practices should permit these activities to be continued with a degree of compatibility in most of the Bow River Basin with the exception of the Wilderness Recreational Areas and those areas zoned for Tourist Development.

In places where conflict is unavoidable, preservation, conservation, and recreational use should have a higher priority. One of the most serious conflicts between timbering operations and recreational use is the safety factor on access roads. A considerable amount of safety research is required. In particular, speed limits on commercial vehicles should be lowered and more strictly enforced.

- (5) Urban or permanent residential development in those areas of the eastern slopes in the Calgary vicinity should, in our opinion, be limited and confined to the existing communities. We recognize that a zone for recreational summer cottages within the Canmore Corridor may be a desirable development, however, the effectiveness of this type of development is dependent on the ability to enforce temporary residence. In this regard, we would recommend that lands zoned for this type of development be based on leases rather than on freehold whether they be privately owned lands or Crown Lands. Further, that strict development agreements be entered into by the property owners and their tenants based on laws passed and rules approved by the Provincial Government.
- (6) With respect to the Zoning, we recommend that the Provincial Government consider using the water shed areas as the basis of their zoning wherever feasible. A detailed inventory of animal and plant life should be made before decisions on the land use are concluded so that reasonable and compatible land uses can be implemented.

- (7) Concerning the **access and use** of bodies of water, we would recommend that a Provincial Law be passed that would preserve the water frontage of all rivers, streams and lakes for a minimum of 250 feet on the Eastern Slopes for use by the General Public.
- (8) Emphasis should be placed on integrated zoning with an over-all land use plan that provides for a wide variety of recreational activities on the Eastern Slopes but this integration should be closely related to the land use plan in the National Parks.
- (e.g.) A heavy commercial zone should not be adjacent to a wilderness park or National Parks. Buffer zones should be incorporated.

#### SUMMARY

It is our submission that the basic philosophy underlying all policy decisions related to the Eastern Slopes of the Rockies have as their first priority the Health and Social wellbeing of people. That this objective be achieved by comprehensive land use planning and zoning. We recognize that no plans or policies can be considered static and fixed for all time and that a systematic evaluation and review process must be incorporated into the governing policies for these lands.

At this time however, when conflicts of use occur, we would, in principle, recommend the following Hierarchy of priority:

Environment and Aesthetic Conservation  
Public Wilderness Recreation  
Provincial Parks  
Private Recreation and Tourist Development  
Grazing and Timbering  
The extraction of Non-Renewable Resources  
Residential Development

H. Boothman  
Director  
PARKS/RECREATION DEPT.  
The City of Calgary  
May 15, 1973.

## QUESTIONING BY THE AUTHORITY

MR. KINISKY:

Mrs. Southern, I'm particularly interested in your recommendation No. 7 concerning 250 feet of frontage along the water courses, lakes and streams. Did you have guidance on this figure as to what sort of protection it gave to the stream banks and the watershed itself or is this just an arbitrary figure that you've chosen?

MRS. SOUTHERN:

We talked about it a great deal but I believe if we told the truth it comes out probably to an arbitrary figure. We talked about it possibly being the escarpments of the hills wherever that was suitable. That sometimes works out better than a yardage. But we are very, very concerned that nothing will happen as it did at Sylvan Lake where you have cottages right on the lake, and others with a road right in front of them. I think that it's probably an arbitrary figure. We certainly never wanted to see anything less than that.

MR. KINISKY:

The other thing I was interested in was the restriction of the extractive industries, especially along the corridor. Can you suggest any solution to us concerning those extractive industries which are already operational and have been so for some time?

MRS. SOUTHERN:

We've discussed this a great deal in committee sessions. I recognize the obligations that the government has under contracts already signed and gone ahead with. What we're suggesting is that no more contracts be signed; that no more extractive industries be allowed to continue in that area. We would hope that there could be some compromises made with the people who are extracting so that they could do something more about restoring the environment to its condition before they entered the areas.

MR. KINISKY:

I think you're probably quite aware of the tremendous pressure that is put on municipalities for the development of necessary services. If we're going to exclude industries which pay a fair amount of the tax burden, how do we rationally finance the provision of services in this particular area?

MRS. SOUTHERN:

Our understanding in this case is that tourism is a very important asset to any province. We believe in the idea of using toll roads to increase the tax base. We think that if the provincial government controls this properly, while granted we would lose some revenues from minerals, toll roads would off-set the loss partly. These areas can be zoned and the principle of these hearings is that they be zoned. We recognize that you can't just eliminate extractive industry. We have a high standard of living, and we certainly don't want to lower it. The city council looked at this and said to themselves that you can't cut everything off, and that's why we have set up a hierarchy of priorities. We know that you can't forget about them. You have to look at them, but we certainly think that conservation is more important. Possibly oil or gas, or the minerals in the ground should be left in storage for future generations.

MR. DOWLING:

You've spoken of well-integrated developments through architectural control. I'm interested in knowing if your committee had any ideas as to how this architectural control could be exercised on developers in the Canmore Corridor?

MRS. SOUTHERN:

We felt that there should be a provincial body set up. All plans would have to go through that body which would state whether or not they were acceptable. There would definitely have to be minimum standards set up that were acceptable to the body passing them. I think it's really very important that it doesn't just become a shabby, junky area.

DR. TROST:

We're very appreciative of the nicely structured brief the city has prepared. Could you give us an indication of what the city believes to be the pressure to use the corridor and the eastern slopes from the population of Calgary itself?

MRS. SOUTHERN:

Are you asking me for percentages of people that would use this corridor?

DR. TROST:

I'm really asking whether you feel there is an unsatisfied need and if it's apt to grow. Is there a serious problem here or not?

MRS. SOUTHERN:

The city has definitely felt that there was a need. I certainly don't want to suggest that the city thinks that it should overlook what it should be doing in its own area. We're not saying that the province is at fault and we're right, because we as a city have done a very poor job of looking after our own requirements. But I think we are more knowledgeable and more interested in this. We are now trying as a city to overcome some of these problems. But after we pass the city level and go on to your authority, then we say, yes.

We see people from Calgary; we know of people from Calgary not being able to get accommodation, not being able to use the national parks in quite the way they would like to. With the national parks' policies being better defined and better understood by the public, development is now possible within the Canmore Corridor. I think that the citizens of Calgary are looking forward to seeing some development. That doesn't mean that we think that it should be opened up and there should be no controls, because we think there should be many controls, and it should be looked at and not rushed into.

DR. TROST:

If something were to be conceived that was developed under proper controls and outside the national park, do you think that it might be catering to the need of a substantial number of people?

MRS. SOUTHERN:

Yes. I think that depending on how the provincial government allows this to be developed, it will look after a lot of people.

Wilderness park areas look after certain types of people. There are many people who are interested in motorized vehicles and I hear from them all the time. I understand they have invested a lot of money and get a lot of enjoyment out of them. It may not be the preference of other people, but there should be areas set up to look after these people. There should be areas that look after people who are handicapped. There should, I think we're suggesting it in the brief, be camp areas set up.

I heard the Regional Commissioner's report this morning asking just how many units you can put into one area without destroying the ecology. There must be more studies done on that, but certainly people are putting more money into motorized vehicles and camping equipment, and we have to look after them. It is a challenge to the Provincial Parks Branch. It's more of a challenge to the federal government and the provincial government to provide something for all of these people. I know you can't be everything to everyone in one location as we suggested this morning, but with the proper land-use zoning, we believe this can be looked after.

We are so excited and pleased to think that the provincial government is going out to the public and hearing from everyone, because everyone doesn't have the same ideas. Through these hearings there can be an excellent design for land use which, although it won't satisfy everyone's needs or at least all of everyone's needs, it will certainly look after the majority.

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WESTERN STOCK GROWERS' ASSOCIATION SUBMISSION  
TO THE  
PUBLIC HEARINGS ON LAND USE AND RESOURCE DEVELOPMENT  
IN THE EASTERN SLOPES  
CALGARY, JUNE 18, 1973.

Presented By: D. Carlson



W.S.G.A. SUBMISSION TO THE PUBLIC HEARINGS ON  
LAND USE AND RESOURCE DEVELOPMENT IN THE  
EASTERN SLOPES - CALGARY - JUNE 18

INTRODUCTION:

The Western Stock Growers' Association believes when considering land use of the Eastern Slopes that the first consideration must be the ecology of the area. Second consideration is the necessity and the importance of agriculture to Alberta. The Association believes that these are the first priorities and that other alternative land uses considered as their respective priorities require.

The protection and management of the ecology will provide an adequate source of clean water. The Association believes that there can be multiple use of the resources and still maintain the environment and the water shed of the Eastern Slopes.

IMPORTANCE OF AGRICULTURE:

The absence of agriculture in the discussion of many reports is of major concern. Agriculture has a major role in the Alberta economy; agricultural industry and it's supporting industries are responsible for 65% of the total Alberta economy. Beef cattle account for 33% of the total agricultural gross receipts. The designated study area of the Eastern Slopes includes 23% of Alberta's cattle population. (2)

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- (1) A voluntary membership organization representing the voice of Alberta cattlemen.
  - (2) Cattle population of the local governments included in the study area expressed as percentage of province.



The per capita consumption of beef has risen to 60.5 lbs. and is predicted to rise higher. The following table predicts the required expansion in the cattle industry if it is to meet the demand for beef due to increased consumption and population growth.

POTENTIAL BEEF REQUIREMENTS BY 1981

| <u>Per Capita<br/>Consumption</u> | <u>Population</u> |            |
|-----------------------------------|-------------------|------------|
|                                   | 25 million        | 27 million |
| 100 lbs.                          | - 21%             | - 17%      |
| 110 lbs.                          | - 39%             | - 31%      |

Source - Planning For Profit - National Beef Seminar - Calgary.

If Canada is required to increase beef production by 50% to meet the demand, it is of particular concern to Alberta because 75% of our beef production is exported out of Alberta, mainly to Eastern Canada. The value of the shipment of the produce from the meat processing industry in Alberta was 393 million dollars compared to only 175 million dollars from the petroleum industry.

(3)

PETITION FOR LAND

The pressure of urban sprawl is in direct competition for available space in the production of food. The following table indicates the rate that the City of Calgary is taking land out of production for residential areas.

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(3) Statistics Canada - 1969.

AREA OF LAND DEVELOPED UNDER REGISTERED RESIDENTIAL PLAN - CALGARY

| <u>Year</u> | <u>Acres</u> |
|-------------|--------------|
| 1968        | 952          |
| 1969        | 1111         |
| 1970        | 946          |
| 1971        | 1169         |
| 1972        | 1426         |

Source - Calgary Planning Department.

The above table does not include land used for industrial and commercial development.

There is a tremendous acreage of land being taken out of production in the areas surrounding urban centres. For example, the two municipal districts of Rockyview and Foothills surrounding Calgary have estimated that 40,000 acres of farm and ranch land was sub-divided and removed from agriculture in 1972. We believe this figure to be conservative.  
(4)

To meet the demand for food, coupled with the pressures of urban sprawl and recreation, we can not restrict the input factor of grazing Crown areas in the Eastern Slopes.

#### LAND CONTROL:

The population growth demands increasing awareness of the recreational needs of society. As the recreational needs grow and overflow the urban facilities into the rural areas, with no rules of development to follow, there develops a direct conflict between the recreationalist and the agricultural producer.

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(4) Calgary Herald - February 24, 1973.

In our experience we have found owners and operators of private land and lease land do not have effective protection of their rights to the land against trespass. The rancher has neither the effective legal authority nor the time to regulate the recreational use of his land. The current flood of people, especially during the hunting season, creates a very real nuisance to the land user.

When a producer is assigned a lease he accepts the responsibility of managing that parcel of land on behalf of government. The lessee must manage it within a set of guidelines set down by the government. The lessee buys the right to lease and manage this land. He is responsible for any damages and/or abuses that occurs to the land under his control, whether they be due to his inadequacy or some one elses. The lessee must have the power to control access if he is expected to uphold his responsibility of caring for the lease and provide a habitat for game.

The lessee pays an assignment fee for the use of the lease. He also annually pays the taxes and royalty plus all other operating costs of maintaining this renewable resource. There is no better conservationist of the land than the user. If the lessee is to improve the level of management and protection as he has in the past he must have control of who is on his land under his jurisdiction and be aware of what they are doing.

The Land and Grazing Division of the Alberta Government had an income account of 2.4 million.

(5)

## PRESERVATION OF RESOURCES:

Experience by members of the W.S.G.A. has shown that the best management of the renewable resource of land and grazing is the man whose living depends upon it. He has to be if he wants to survive. Through proper management the grass cover in much of the Eastern Slopes has been improved. The Dry Cottonwood Forest Allotment, through proper management increased the stocking rate from 1820 A.U.M. (animal units months) to 2500 A.U.M. If the climate is right to give security of tenure, <sup>(2)</sup> management will conserve the environment while insecurity of tenure often causes a temptation to exploit the resource because you may not have it for long.

To preserve the water shed of the Eastern Slopes, there must remain a protective covering over the soil. One of the most serious threats to this cover is fire. Controlled grazing of livestock will reduce the fire potential. The reduction of this potential becomes more essential as the number of people using the area increases. The Association would like to point out that the volunteer fire fighters of an area are initially the agricultural users of the land.

Another threat to eroding the protective cover away is motorized recreational vehicles. They try climbing steep inclines, spinning their wheels, loosening the soil and making a rut so rain will wash it away. It leaves a trail that others will follow and it soon becomes a beaten track.

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(6) Bob Ross - State Range Conservationists, Soil Conservation Society  
Bozeman, Montana.

Isolated instances are found and used to represent the average where poor management allows damage to the surface environment along stream banks. Advocates of fencing stream banks are only aggravating the problem. It will concentrate livestock to the areas of limited access to water. These isolated instances are very limited and can be quickly and easily identified thus the person responsible can be easily contacted and corrective management practices initiated.

#### COMPATIBLE USES OF LAND:

The Association believes that domestic livestock and wildlife are compatible in the same area. Wildlife graze on different plant species than cattle. Livestock will utilize the soft grass of the valley floors leaving the high land of hard grass, which blows clear of snow during the winter, for wild game to graze on. The grazing of livestock can be effectively managed to protect the environment and utilize the resources while wildlife can not.

Studies conducted in Central Europe found that livestock grazing is essential in keeping the streams and water supplies clean and preserving the natural beauty of the countryside.

(7)

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- (7) "Size and Allocation of Areas No Longer Used for Agriculture",  
Dr. H. Wachorst, Dept. of Agriculture, West Germany.

"A Problem In Range Management",  
Dr. W. Kolt, Dept. of Environment, West Germany.

"Economical Aspects of Alternative Use of Marginal Land",  
Dr. E. Neander, Institute of Agricultural Economics, West Germany.

"The Utilization of Marginal Land for Livestock Production,  
Particularly in the Mountain Areas of Central Europe",  
W. E. Oir, West Germany.

There is often a conflict in the results of many studies about land use of the Eastern Slopes due to the professional training of the surveyor. Much of the work done in the Eastern Slopes has been done by forestry oriented people, who are qualified for looking at forest potential but not for agriculture. The resulting conclusion is that much of the land may be better suited for grass than forestry.

The duties and rights of the land user or renter must be recognized. The public must also recognize their duties and rights in preserving the environment.

Recreation on our rural land; deeded, leased, or rented, is considered a "right" by many rather than the privilege it is. Recreation in the Foothills is currently being subsidized by other users; agricultural use and resource development pay taxes, rentals, grazing fees, rights of entry, etc., while the extensive recreationalist uses it at no cost to himself.

#### SUMMARY:

In summary, the Western Stock Growers' Association believes the following priorities can be developed:

- (1) Agricultural use be a high priority in establishing land use of the Eastern Slopes. The demand for food is increasing the same as the demand for recreation.
- (2) Leave the say in land classification and use as much as possible within the hands of the people whose living depends upon it. They know the land, the topography, the climate, and the uses of it better than anyone else. They use it as a renewable resource if they are to survive.
- (3) Foster the use of all land for limited recreational use allowing democracy to function and the individual preference as to what recreation he feels he can cater to.

- (4) The development of population corridors for intensive recreational facilities - commercial development.
- (5) Areas between the intensive recreation areas be left for extensive recreation with very limited motorized access and under the control of the land user.
- (6) Encourage urban areas to develop parks and to restore and maintain natural areas within their boundaries.





## QUESTIONING BY THE AUTHORITY

MR. KINISKY:

In some of the discussions I've had with agricultural people, it has been suggested to me that if there were more freedom given to the person who holds a grazing lease he could, in fact, manage the grazing leases much better than under the present regulations. Do you have a comment you'd like to make concerning this?

MR. CARLSON:

Yes. We have advocated this for many years for the simple reason of security of tenure. Ranchers like to have wildlife the same as the city people do. If they have security of tenure, they will develop this land and the wildlife and improve production. But with lack of security of tenure, they have a tendency, like everyone else, to exploit it for all it's worth.

MR. KINISKY:

When you have a specified grazing lease, for example, are you directed as to how many cattle you must put on it despite your own opinion as to the capacity of that land?

MR. CARLSON:

In the grazing lease you sometimes lease it long term, and you can utilize that to the best of your management ability. You don't have a number of specific cattle to put on it but if you abuse it the government has the right to take it away from you. In other words, if you do overgraze it, they can take it away.

MR. KINISKY:

There are a couple of points which arise concerning the degradation of stream banks and the spoiling of fisheries. Over some travels that we've had, we have looked at some of the indications of extreme bank degradation because of pretty hefty grazing. Have you some solutions that could be offered as to how to get around this problem?

MR. CARLSON:

I personally have never seen a problem that serious. I don't question it. Probably there are, but we feel that they are few. One of the other things that does happen is sometimes the stream banks are steep and will tend to erode. But that is gradual and the grass will grow and the soil will stabilize itself.

MR. KINISKY:

What would you think of the idea of fences to allow only limited access to cattle for some of these stream banks?

MR. CARLSON:

I believe that way you only create a bigger problem in a smaller area.

MR. KINISKY:

The all-terrain vehicle owners are coming in for some pretty hard use in these hearings. Have you seen any of them using their vehicles in a manner which doesn't cause the type of environmental degradation which you feel so strongly about?

MR. CARLSON:

Probably the snowmobiles do not damage the environment when it is covered with snow, but they do create other problems. Sometimes these boys forget to respect a fence and they have a pair of pliers and cut the fence wires and away they go. With caution, these all-terrain vehicles probably can go into a lot of areas, but you get a large number of people in there and it's pretty hard to control them.

MR. DOWLING:

I am interested in knowing whether you believe that eastern slopes ranchland is now up to or close to its carrying capacity as far as beef cattle are concerned?

MR. CARLSON:

Within the Province of Alberta, in most of the settled areas, I think all the available land is used for production. There may be some land left in the northern part of the province that has not been developed. I believe that in its present state, it is used to its maximum.

MR. DOWLING:

By what means do you see agricultural land being protected from subdivision?

MR. CARLSON:

That's a loaded question. I guess the most obvious one right now would be some sort of zoning. But then we run into problems because there are some people who would like to sell their land for subdivision and other people who want to preserve it for agriculture. Now, I feel that if I had the solution to that problem, I wouldn't have to stand here or work for a living any more.

MR. DOWLING:

Is there any way the Western Stock Growers' Association can possibly police its own members to prevent them from selling land for subdivision?

MR. CARLSON:

Most of our members are on the other end of the stick. They are trying to buy it. Only a very limited number of them are on the selling end.

DR. TROST:

Mr. Carlson, I think the general weight of your submission is towards control in the hands of the user, but you raised many points that require zoning restrictions or some other element of control. Where do you feel, if there is a need for what might be called government control, it should best come? At the provincial level? At

the district level, that is at the district planning commission level, or at the municipal level?

MR. CARLSON:

It would probably have to be at the provincial level to try to maintain some uniformity across the province. I believe very strongly that the people involved in the land must be involved in its future use and in the classification of the use. If we get involved at the municipal level, or the planning level, you could end up - I think there are seven regional planning commissions - with seven different policies developed. This could create quite a hardship if you happen to be on the line between two planning districts. You have land in one district and land in the other. It puts you on the fence.

DR. TROST:

You suggested that some land now zoned for forestry, in your judgment or in the judgment of the Western Stock Growers' Association, might better be used as grazing land. Have you maps that show what particular areas might be involved?

MR. CARLSON:

We really haven't gone into it that deeply. You have maps showing zones of moderate, high, and so on, for forestry use. We believe that a lot of these lands that are low forestry possibly could be better utilized for grazing. Our reason for thinking this is that a person trained in forestry takes a look at the potential. If, for example, it takes 80 years for a tree to grow, a lot of things could happen to it within those 80 years. There could be a fire, disease, and this sort of thing, but it may not develop just that way. There are probably areas proven to be good forestry areas.



STORAGE OF WATER  
IN THE  
BOW RIVER BASIN

A Brief Submitted by Calgary Power Ltd.

to  
The Public Hearing  
on  
Land Use and Resource Development in the Eastern Slopes  
Alberta Environment Conservation Authority  
Calgary, June 18-20, 1973

Presented by: T. Stanley

## STORAGE OF WATER IN THE BOW RIVER BASIN

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## STORAGE OF WATER IN THE BOW RIVER BASIN

## INTRODUCTION

Water is one of the primary resources of the Eastern Slopes of the Rocky Mountains. The importance of well-regulated streamflow from this region to the productivity of the Prairie Provinces cannot be over-emphasized. This is so because the Eastern Slopes have a relatively reliable and abundant water supply each year, while the plains to the east are inherently subject to periods of drought and excess. In fact, the erratic occurrence of wet and dry cycles in the history of western North America has variably resulted in the prairies being described as a Garden of Eden or part of the Great American Desert. In an extremely dry summer, such as 1961, very little runoff occurs from the plains, and the flow of rivers traversing them may be wholly dependent upon the runoff originating in the Eastern Slopes.

Streamflow from the Eastern Slopes is relatively reliable from year to year but it is extremely variable from season to season - summer flows being ten to fifty times as great as those of winter when all precipitation falls as snow. The potential for storing water from the summer snow melt in natural lakes or man-made reservoirs for later use is an important resource, and one for which land may be used to great advantage. This need has been recognized for many years, of course, and reports dated as early as 1912 stress it. Storage of surplus water for use in periods of deficiency, whether it be in the high mountains, the foothills or the plains is of far-reaching importance as a renewable resource. Great responsibility rests on us all to ensure that this resource remains renewable, and that it is well-managed.

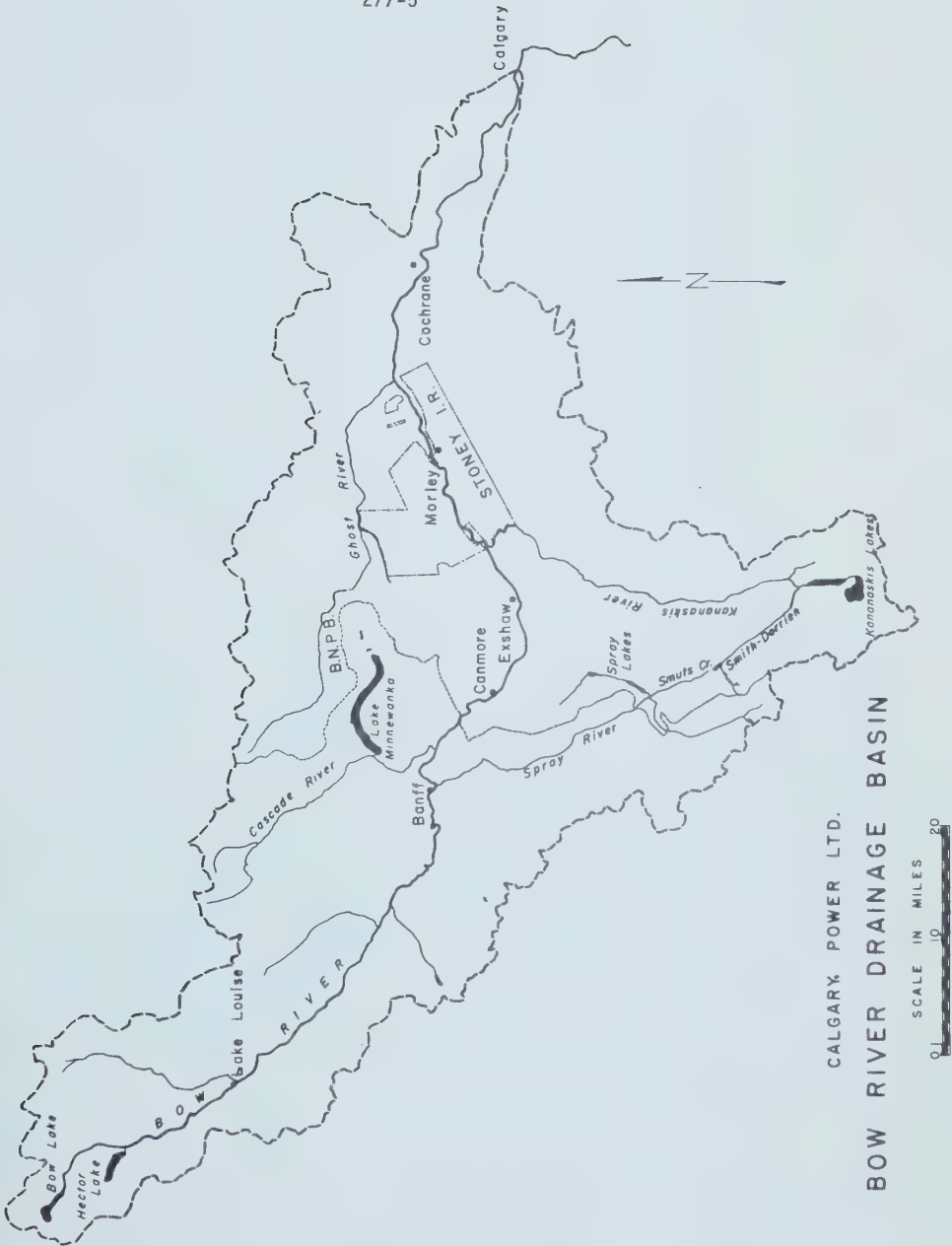
It is the intention of this brief to describe the development of storage by Calgary Power Ltd. as part of its hydroelectric system in the Bow River Basin and to show how the water management practices developed to integrate these plants with the rest of the Provincial power supply system have resulted in substantial subsidiary benefits to irrigation, streamflow augmentation during low flow periods, domestic and industrial water supply and other uses. It is noteworthy that this development has been financed entirely by revenue from power sales, without contributions from Government or others for any of the other benefits. At the same time, the power supply has been low-cost and reliable and has helped to raise the quality of life and advance the industrialization of the area.

#### LAND USE BY THE COMPANY IN THE BOW RIVER BASIN

The Bow River, as illustrated on Plate 1, has an area of 3,000 square miles above the Water Survey of Canada gauging station at Langevin Bridge, just upstream from the mouth of the Elbow River in central Calgary. Of this drainage area, 1,342 square miles lie within Banff National Park, another 126 square miles are occupied by the Stoney Indian Reserve and a few square miles lie downstream from the eastern limits of the Study Area as defined by the Authority's informational bulletins. Thus, the Bow drains about 1,500 square miles within the Study Area.

Calgary Power Ltd. operates eleven hydroelectric plants on the Bow River and its tributaries as an integral part of the electric system from which it supplies approximately 60% of the Province's electric power

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CALGARY POWER LTD.  
**BOW RIVER DRAINAGE BASIN**

SCALE IN MILES  
0 10 20

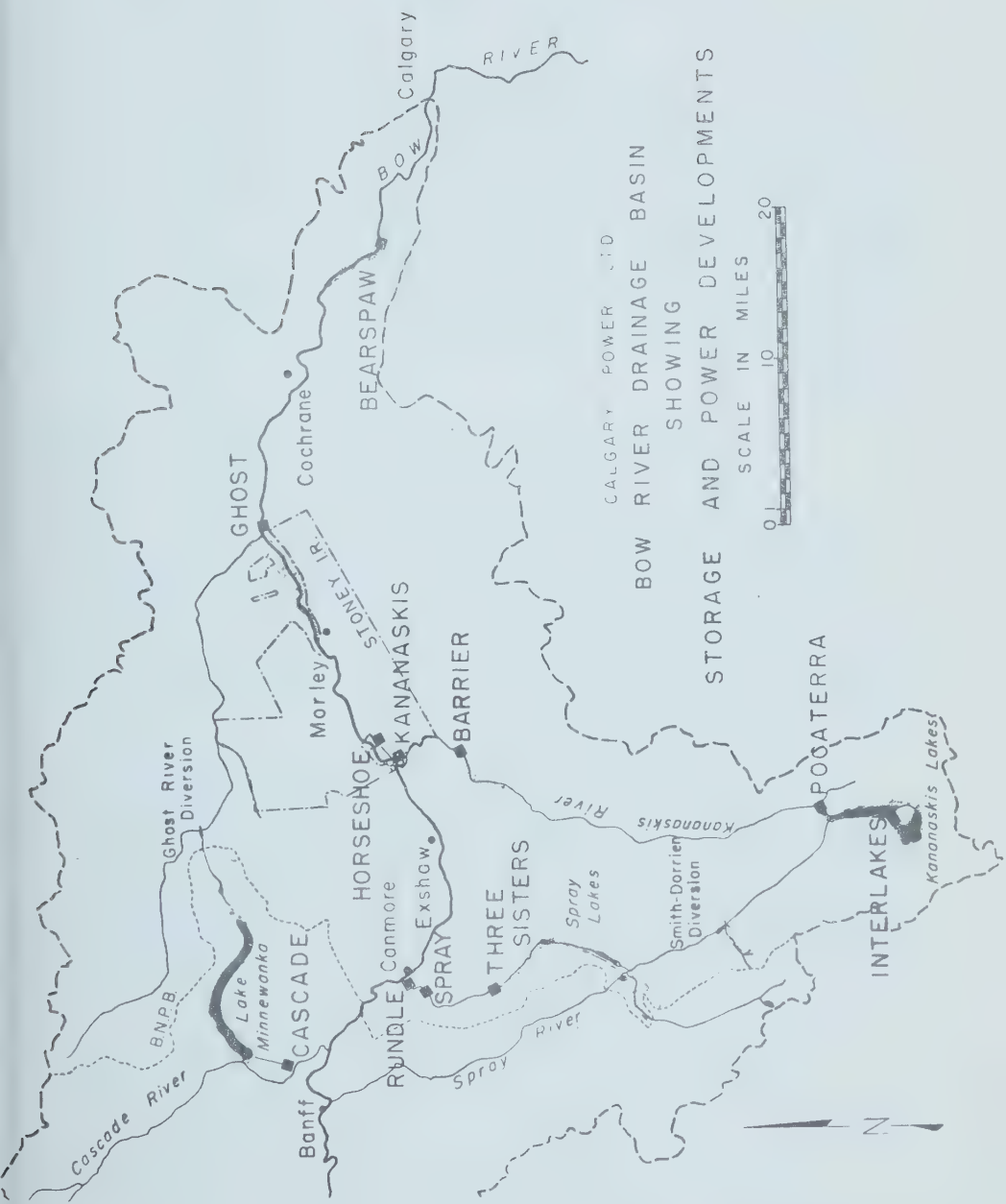
requirements. As illustrated on Plate 2, these power plants are:

- Cascade, which utilizes the flow of the Cascade River and part of the Ghost River as regulated by storage on Lake Minnewanka,
- Three Sisters, Spray and Rundle, which utilize the diverted flow of the Spray River as regulated by storage in the Spray Reservoir,
- Interlakes, Pocaterra and Barrier, which utilize the flow of the Kananaskis River as regulated by storage on the Upper and Lower Kananaskis Lakes, and
- Kananaskis, Horseshoe, Ghost and Bearspaw, which utilize the flow of the Bow River as augmented by the storages on the aforementioned reservoirs.

A chronology of the development of the hydro system is given in Appendix I. The principal storage reservoirs on Upper and Lower Kananaskis Lakes, Spray Lake and Lake Minnewanka control the runoff from 569 square miles, about 19% of the total drainage area above Calgary.

It is recognized that the Cascade River and Lake Minnewanka lie within Banff National Park and are, therefore, outside the terms of reference of this hearing. However, since the storage developed by the Cascade Project makes an important contribution to the Bow River water management practices, which we wish to place before this Authority, the hydrologic data for the project must be included.

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SHOWING  
STORAGE AND POWER DEVELOPMENTS

The ten projects located outside Banff National Park occupy some 14,700 acres, about 23 square miles or some 1.5% of the Study Area. Over 90% of this land, some 13,500 acres is occupied by the three reservoirs at Spray and the Kananaskis Lakes. There are also 238 miles of transmission lines between plants and load centers. The rights of way along which these lines are constructed have a total area of about 2,230 acres.

Access to power plants, water intakes, pumphouses and substations is limited for reasons of public safety, but the Company's use of the land does not preclude other uses which are complementary to the prime purpose of the developments - the production of low-cost, reliable electric power. As will be described later, extensive use is made of the reservoirs and forebays for other benefits and project development has improved access to some parts of the Study Area.

The lands required for the plant and flooded areas of the Rundle, Kananaskis, Horseshoe, Ghost and Bearspaw Projects are owned outright by the Company. All other lands occupied by the works described in the foregoing are under lease from the Crown under terms of the several licenses for hydroelectric development.

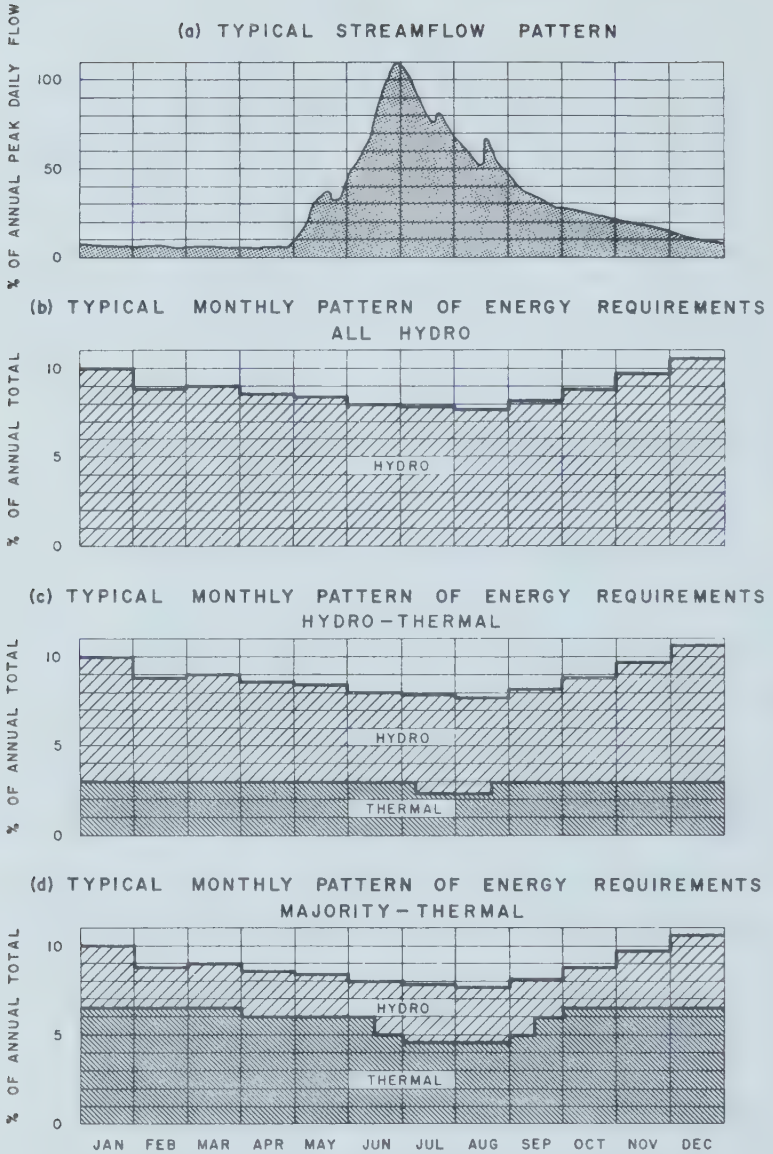
## ROLE OF BOW RIVER HYDRO IN PROVINCIAL POWER SUPPLY SYSTEM

Through its major period of expansion in the 1940's and early 1950's the Bow River hydro system was the principal supply of electric power to Calgary Power Ltd.'s service area. As shown by Figures a) and b) of Plate 3 the natural pattern of streamflow is diametrically opposed to the pattern of electric power demand - high flows during the summer when demand is at its lowest and low flows during the winter when demand is at its highest. Hence, storage is required to conserve surplus summer flows to produce power as demanded during the long low water season. During this period of time the storage volume on Lake Minnewanka was quadrupled, that on the Upper Kananaskis Lake was tripled, and the Spray and Lower Kananaskis Lake reservoirs were built.

When the first large steam generating units were added to the Company's system at Wabamun in the latter half of the 1950's they were used to supply a relatively constant load throughout the year because this resulted in maximum use of the equipment and the lowest cost of power. To supplement this base load power from the steam units, the hydro units were used to generate the peak load power. As can be seen from comparison of Figure c) with Figure b), this tended to accentuate the imbalance between winter and summer demands on the hydro system. Extra peaking capacity was installed at Cascade, Spray and Rundle and the use of storage was concentrated in a shorter winter period during this phase of system development.



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CHANGING ROLE OF HYDRO AS THERMAL  
CAPACITY INCREASES

Through the 1960's continued expansion of the steam generating capacity took place, and the proportion of the total energy demand supplied by thermal plant increased rapidly - to more than 75% of the total demand of 7,400 million KWH on Calgary Power Ltd.'s system last year. All generation by Edmonton Power and Alberta Power Limited is from thermal plants. The large thermal units must be taken out of service for inspection and maintenance for a period of from two to four weeks at intervals of about one year. It is convenient to carry out this maintenance during the summer when power demands are at their lowest levels, because system reliability is not adversely affected by the absence of the unit at that time. This situation is illustrated by Figure d) of Plate 3 which shows the hydro energy more evenly distributed through the year than in the earlier situations described by Figures b) and c).

Since about 1964 the supply situation has been similar to that illustrated by Figure d) and the hydro storage operation has been changed to meet the new requirements. Prior to 1964 the practice was to try to empty the storages each year in late April, but the current demands on the power system are best met by withdrawing only about two-thirds of the total reservoir volume during the winter under normal conditions. With a smaller volume to be refilled in the summer, more hydro energy is available to facilitate the thermal maintenance program. This practice also provides a reserve storage equivalent to about 170 million KWH for use in the event of a particularly poor runoff year or unforeseen difficulties with a major thermal generating unit. This is a very significant part of the average annual production

of about 900 million KWH from the Bow River hydro plants and enables them to provide a reliable source energy on short notice to replace one of the steam units which has been forced out of service for a few days. Because of the reliability and flexibility of the hydro units, and by virtue of the interconnected transmission systems in the Province, this reserve storage energy is available to all parts of the Province as well as Calgary Power Ltd.'s service area.

Appendix II contains tabulations of the Bow River reservoir volumes expressed in both acre-feet and equivalent KWH and of the Provincial electric power system installations and energy capabilities. Table 1 summarizes the operating characteristics of the Bow River reservoirs and headponds, and the following paragraphs contain some descriptive notes about them.

Lake Minnewanka Reservoir has a total storage capacity of 180,000 acre-feet between full supply level of 4,840 and low supply level of 4,805. Since 1964 over half of this amount, 91,000 acre-feet has been considered to be reserve storage. Water supply is from 248 square miles of drainage area on the Cascade River and a diversion of part of the upper Ghost River.

Spray Reservoir has a total storage capability of 208,000 acre-feet in a 56-foot drawdown from full supply level of 5,583. This amount of water runs off the 185 square miles of mountainous watershed three years in five. Small diversions involving 13 square miles of Burstall and French Creek drainage areas were made in 1949 and 1959 to improve storage reliability. Since 1964 the bottom 75,000 acre-feet of storage has been considered to be reserve storage.

TABLE 1

## OPERATING CHARACTERISTICS OF BOW RIVER RESERVOIR AND HEADPONDS

| Reservoir        | Gross Storage | Net Used Yearly acre-feet | Intermittent Plant Operation | Storage Withdrawn   | Lowest Reservoir Level | Refilling Begins | Within 5 feet of max. level by            |
|------------------|---------------|---------------------------|------------------------------|---------------------|------------------------|------------------|-------------------------------------------|
| Minnewanka       | 180,000       | 89,000                    | May to September             | October to March    | April, May             | mid-May          | end of June to mid-July <sup>a</sup>      |
| Spray            | 208,000       | 133,000                   | May to September             | October to April    | May                    | mid-May          | end of July <sup>a</sup> to end of August |
| Upper Kananaskis | 100,000       | 71,000                    | September only               | October to February | March to May           | mid-May          | mid-September                             |
| Lower Kananaskis | 50,000        | 50,000                    | May to January               | February March      | April to mid-May       | mid-May          | mid-July                                  |
| Barrier Headpond | 20,000        | 20,000                    | n.a.                         | April               | May                    | late May         | end of June                               |
| Ghost Headpond   | 75,000        | 26,000                    | n.a.                         | May                 | May                    | late May         | end of June                               |
| Totals           | 633,000       | 389,000 <sup>b</sup>      |                              |                     |                        |                  |                                           |

a, except in a year in which carryover storage is used which would be nearfull later to an amount depending on the spring snow pack and extent of April depletion of storage.

b. the minimum total storage used in the low water season is equivalent to an addition of 950 cubic feet per second to flow of the Bow River at Calgary October through March.

The Upper Kananaskis Lake Reservoir has a storage capability of 100,000 acre-feet, some 29,000 acre-feet of which is considered to be reserve storage. The full storage volume is available four years out of five from the 56 square miles of high mountainous watershed. With present operating procedures the Lake fills by September in almost every year.

The Lower Kananaskis Lake Reservoir has 50,000 acre-feet of storage potential and fills readily by August every year from the runoff from the 67 square miles of mountainous watershed below the Upper Lake.

Barrier and Ghost were important reservoirs when first developed. However, the development of the larger storages upstream has made head more valuable at these locations. Normal operation consists of holding these headponds near their full supply levels throughout the major part of the year. On occasion an emergency situation may require some drawdown on a short term basis but refilling is then accomplished as soon as possible. Standard practice also results in a drawdown of both reservoirs in April and May to make water available for irrigation withdrawals farther downstream prior to the commencement of the spring runoff from snow melt.

The other headponds are maintained near their normal operating levels throughout the year with only minor variations in level to match the hourly fluctuations in the demand for power.

## WATER MANAGEMENT AND MULTI-PURPOSE USE OF RESERVOIRS

The foregoing paragraphs have been concerned with the manner in which the storage reservoirs in the headwaters of the Bow River are operated to regulate the river flow and provide a useful and economical source of power. The conservation of surplus waters in the high flow spring-summer season for use in the winter results in other benefits. Naturally, every reservoir does not serve every other purpose. The extent to which the Bow River power projects provide some of the other benefits commonly attributed to multi-purpose water resource developments is described in the following paragraphs:

Irrigation

Three irrigation projects draw their water supplies from the Bow River:- the Western Irrigation District at Calgary, the Bow River Development at Carseland, and the Eastern Irrigation District at Bassano. Beginning in late April the W.I.D. and E.I.D. projects withdraw water from the River to replenish their internal storage reservoirs and for distribution, as required, to irrigated fields and stock-watering ponds. The Bow River Development uses water from their Lake McGregor storage throughout May and does not require water from the River until June. Irrigation demand varies with precipitation but normally remains high through early August. Continued withdrawal occurs following the harvest for the purpose of refilling storage reservoirs and replenishing the water table. This results in water being drawn from the River from the earliest possible date in April until the latest possible date in

October. In most years the natural flow of the Bow River is adequate for the irrigation withdrawals from late May through September. However, in some years, particularly dry conditions during the latter part of the summer may require more irrigation water than is available from the Bow's natural flow. In most years the irrigation demands in late April, early May and late October exceed the natural capability of the River.

Use of pondage at Ghost and Barrier headponds to augment river flow in the spring has been practised yearly since these developments came into service in 1929 and 1947, respectively. Normal withdrawals are some 20,000 acre-feet from Barrier Lake during April and some 26,000 acre-feet from Ghost Lake in the first two weeks of May; if snow melt runoff is delayed past May 14, further withdrawal from Ghost is carried out. The two forebays are mostly replenished during June when runoff is in excess of irrigation requirements. Lake Minnewanka storage is used when it is necessary to supply late summer and fall deficiency of flow. Such use may well result in an appreciable drawdown of Lake Minnewanka in August and September. The last time this occurred was in 1971.

#### River Flow Augmentation During Low Water Season

Approximately two-thirds of the Bow River watershed above Calgary lies within the Rocky Mountains and is typically very productive of runoff from snowmelt during the summer. The entire river basin produces low runoff during the seven-month snow accumulation period from mid-October to mid-May. As a result the flow of the Bow River at Calgary in its natural state fell from 700 cfs to 400 cfs or less during the winter and rose to a normal summer



maximum of 8,000 to 20,000 cfs, with occasional floods of several times this magnitude occurring as a result of exceptional rainfall over the foothills.

Augmentation of river flow in Alberta during the winter is desirable for maintenance of water quality. When flows are low a river's ability to assimilate and biologically degrade the wastes discharged to it is low. The problem is accentuated in Alberta by the fact that the rivers are normally ice covered from December through March so that dissolved oxygen contents are low and difficult to renew. As a result the biochemical oxygen demand of the wastes tends to extend farther downstream from their point of entry in the winter than in the summer.

The use of storage for hydro development has raised the average winter flow of the Bow at Calgary significantly, the volume now planned for annual use being equivalent to an addition of some 700 to 1,000 cfs from October through March. Daily and weekly fluctuations of flow do occur, of course, in response to the demands for power. Construction of Bearspaw in 1954 has resulted in a reduction of the daily fluctuations of flow at Calgary, and a minimum flow of 1,000 cfs can be readily maintained.

Augmentation of winter flows is recognized as a source of greater quantities of slush ice during early winter, and potentially, therefore, more severe ice packing and higher backwaters. Operational procedures, involving a short-term reduction of flow during the first severe cold spell of the winter, have been developed to minimize this problem.

### Domestic and Industrial Water Supply

In 1932 the City of Calgary completed the construction of the Glenmore Reservoir to provide a regulated flow from the Elbow River for domestic water. As the City grew to the northwest the system was extended in 1971 by tapping-in to the Bearspaw Dam for a supply to the new filtration and treatment plant located downstream. Bearspaw forebay and the upstream storage reservoirs assure the City of a reliable water supply from this source.

East of the City, Cominco's fertilizer plant and the oil refineries draw water directly from the River. While their needs do not exceed the natural flows, the ease of withdrawal is improved by the presence of upstream storage.

### Short-Term Control of Streamflow

The Company cooperates with other authorities and with citizens groups who wish to have the flow in a particular reach of the river held at a constant level or a low level for a short period of time for a special purpose. Examples from the last few years are pipeline and bridge construction, cattle crossings, environmental cleanups, canoe races and fish derbies.

### Flood Control

As described in the section dealing with their role in the Provincial power supply system, the principal storage reservoirs on the Bow are drawn down during the low water season and refilled during the summer. A measure of flood control is inherent in such operation, since outflows from the reservoirs are almost invariably well below those of a state of nature

at the time of the highest flows in Calgary. However, this does not result in a large reduction in a potential flood at Calgary because the major part of such flood flows is due to rainfall on the foothills, well downstream from the reservoirs. Also, as noted previously, the Ghost forebay is drawn down each spring and operating rules there ensure that it is storing water during periods of high flow. However, its volume is so small in relation to damaging floods at Calgary that it will provide only a minor reduction in the peak of an extreme flood.

### Recreation

Perhaps somewhat surprisingly in an area where opportunities for water-based recreation are limited, the Bow River hydro developments have not resulted in extensive recreational development. The reasons are fairly evident from an examination of land ownership and climatic situations.

Both Kananaskis and Horseshoe have small ponds, less than 150 acres in area, and do not provide significant opportunities for boating or swimming. The Horseshoe headpond is located in a steep-banked portion of the River with difficult and dangerous access to the water throughout. A commercial guest ranch located on the lands adjacent to the Kananaskis forebay derives some scenic advantage from it.

Lands adjacent to Ghost and Bearspaw, the two developments located closest to Calgary, are nearly all restricted to public access by lack of public access roads and ownership of adjoining lands by others than the Comp-any or the Crown; at Ghost approximately 50% of the shoreline is bordered by

the Stoney Indian Reserve and the remaining 50% by privately owned lands; at Bears paw about 30% of the north shoreline is within the right of way of CPR's main trans-continental line, while the lands bordering the remainder of the north shoreline and the entire south shoreline are owned by private parties. Extensive cottage development has taken place at Ghost Village, on the north shore of Ghost Lake. Boating of all sorts is common in the summer and some ice boating occurs during the winter.

In the case of the reservoirs created on the mountain lakes and headponds in the forest reserve, cottage development has been precluded by the Crown except at Lower Kananaskis Lake. Authority and direction for further development is vested in the Crown. These lakes lie at elevations of 4,500 to 5,500 feet above sea level and since most of the water originates from snowmelt they are very cold, thus discouraging swimming and water skiing. Three of the lakes lie in valleys transverse to the mountain ranges and are thereby subject to prevailing westerly winds. Their main reaches are such as to be dangerous for small power craft and ill-suited for sailing, although some boating takes place in sheltered reaches with good access for day-users. Lower Kananaskis Lake is naturally more protected from wind and is used for boating and fishing to a greater degree. The enlarged section of Cascade power canal, known as Two Jack Lake affords excellent boating in Banff Park. Trails and roads built in connection with the storage developments have improved access to the immediate areas of the mountain lakes, thereby facilitating the use of these areas for boating, fishing, hiking and camping. The Company does not have any data on the extent of use of the lakes for any of these purposes, but is aware of and

contributes to some continuing studies by the Fish and Wildlife Division of Department of Lands and Forests, to identify and determine fish productivity.

#### PROSPECTS FOR ADDITIONAL FUTURE LAND USE AND RESOURCE DEVELOPMENT

The Bow River and its tributaries have been extensively explored by the Company for additional hydro prospects. At this time it has no plans for further development because the remaining sites for conventional development are small in relation to present-day loads and lack storage potential. However, increasing costs for fossil fuels or the demand for more peaking capacity could someday indicate the desirability of further development. Three conventional sites are known:

Russell, just upstream from Ghost, which would lie wholly  
within the Stoney Indian Reserve,  
Radnor, just downstream from Ghost, which would be wholly  
contained by the River valley, and  
Glenbow, just upstream from Bearspaw.

Additional peaking capacity might be installed at some of the existing plants or by pumped storage developments utilizing relatively high heads between existing headponds or reservoirs and adjacent lakes or potential storage basins. Possible sites have been tentatively identified above the Upper Kananaskis Lake, on Ribbon Creek and along the south bank of the Bow near Ghost and the Radnor site.

Increases in the installed generating capacity in the Bow River Basin would require some additional transmission. Where new plants were involved new rights of way would also be required, but plant extensions

might in some instances be handled by rebuilding lines at higher voltage on existing rights of way. Since there are no firm plans for any additional plant installations no study has been given to possible new transmission line routings.

The Elbow River and Highwood River both join the Bow River a short distance downstream from the Study Area, and the major part of their watersheds lies within the Study Area. Calgary Power Ltd. does not know of any prospects for development of hydroelectric power on either of these rivers.

Many proposals are being put forward for development of recreational, mining, oil and gas, and industrial facilities within the Study Area. Most of these will require electrical power and transmission lines will be required to serve them. It is impossible to say at this time where such lines would originate or the routes which they would follow, but it is clear that further development of any form will require rights of way for electrical transmission.

#### SUMMATION

A brief description of Calgary Power Ltd.'s Bow River hydro system has been given, with emphasis on the lands occupied by the projects and their associated transmission and on the management practices which have evolved for the full development of the water resources of the region.

A total of 16,900 acres, about 26.5 square miles or 1.8% of the Study Area defined for this hearing, are occupied by the reservoirs, dams,

plant buildings, other structures, access roads and transmission rights of way required for the production and delivery of electric power. Access to some project areas is limited for reasons of public safety, but the Company's use of the land does not preclude complementary use by others, and has improved the accessibility of some parts of the Study Area.

The hydro plants in the Bow River Basin produce about 900 million KWH per year, or about one third of the total electric energy requirements of the City of Calgary in 1972. Moreover, reserve storage held in the reservoirs provides a source of reliable power which is quickly available throughout the Provincial interconnected system in case of mechanical trouble with any of the large steam units which provide the major part of the Province's power. The use of storage to conserve the high seasonal river flows of June, July and August for use through the turbines during the low water season provides other subsidiary benefits. Storage releases during the spring and early fall provide water for the three irrigation projects which divert water from the Bow River downstream of Calgary. Similarly, the increased flows throughout the winter substantially improve river water quality and reliability of supply to the benefit of downstream domestic and industrial water users, as well as fish and wildlife. The Company believes that the reservoir operating practices which it has developed to meet the needs of the electric power supply system, irrigation and winter flow augmentation serve the overall public interest in the management of the water resources of the Bow River Basin.



APPENDIX I

CHRONOLOGY OF BOW RIVER BASIN HYDRO DEVELOPMENT

## APPENDIX I

## CHRONOLOGY OF BOW RIVER BASIN HYDRO DEVELOPMENT

- 1911 The Horseshoe Falls plant completed. Capacity 24,360 HP, head 72 feet. First transmission line to Calgary completed. Calgary Power Company Limited customers consisted of the City of Calgary (wholesale) and Canada Cement Company.
- 1912 First storage reservoir dam completed at Lake Minnewanka. Lake level raised 16 feet. Second transmission line to Calgary completed.
- 1913 Kananaskis Falls plant completed. Capacity 12,000 HP, head 72 feet.
- 1915 Municipality of Cochrane served.
- 1924 A 66 KV transmission line completed from Seebe to Calgary.
- 1929 Ghost River plant completed. Capacity 37,450 HP, head 110 feet. Interchange contract entered into with the City of Edmonton.
- 1930 132 KV transmission line completed to Edmonton from Ghost. Commenced partial supply of bulk power to Red Deer.
- 1933 Dam at Upper Kananaskis Lake built to raise lake level by 20 feet.
- 1938 138 KV steel tower line completed from Ghost to Calgary.
- 1941 Earthfill dam completed at Lake Minnewanka raising reservoir level by an additional 65 feet.
- Completion of Ghost Diversion turned water through Devil's Gap into Lake Minnewanka.
- 1942 Cascade plant completed. Capacity 23,000 HP, head 345 feet. Addition built to Upper Kananaskis reservoir dam, raising storage level by 50 feet.
- 1947 Calgary Power Company Limited reorganized under the name Calgary Power Ltd. Barrier plant completed. Capacity 13,500 HP, head 155 feet.

- 1951 A 12,000 HP extension to Kananaskis plant completed, bringing total capacity to 24,000 HP.
- Spray Development completed with Spray plant capacity of 62,000 HP and head of 900 feet, Rundle plant of 23,000 HP and head of 320 feet, and Three Sisters plant of 3,600 HP and head of 65 feet. Second 138 KV transmission line from Ghost to Edmonton completed.
- A 138 KV transmission line completed from Bow River hydro plants to the Crowsnest Pass area.
- 1954 Ghost plant extension completed. 30,000 HP added, bringing total capacity to 67,450 HP.
- Bearspaw plant completed. Capacity 20,750 HP, head 50 feet.
- 1955 Pocatererra plant completed. Capacity 18,400 HP, head 207 feet. Interlakes plant completed. Capacity 6,900 HP, head 127 feet.
- 1957 Cascade plant extension completed. 23,000 HP added, bringing total capacity to 46,000 HP.
- 1960 Spray plant extension completed. Second unit added doubling plant capacity of 62,000 HP to 124,000 HP.
- Rundle plant extension completed. A second unit of 40,000 HP increased plant capacity to a total of 63,000 HP.

APPENDIX II

BOW RIVER BASIN STORAGE RESERVOIRS AND HEADPONDS  
ELECTRIC UTILITY GENERATING CAPACITY IN ALBERTA

TABLE II-1

## BOW RIVER BASIN STORAGE RESERVOIRS AND HEADPONDS

| Project          | Storage Area | Full Supply Level | Low Winter Level | Drawdown | Storage Volume | Equivalent Energy Stored |
|------------------|--------------|-------------------|------------------|----------|----------------|--------------------------|
|                  | acres        | feet a.m.s.l.     | feet a.m.s.l.    | feet     | acre-feet      | million kwh              |
| Minnewanka       | 5475         | 4840              | 4805             | 35       | 180,000        | 95 (1)                   |
| Spray            | 4910         | 5583              | 5527             | 56       | 210,000        | 267 (2)                  |
| Upper Kananaskis | 2120         | 5583              | 5529             | 54       | 100,000        | 59 (3)                   |
| Lower Kananaskis | 1585         | 5469              | 5425             | 44       | 50,000         | 27 (4)                   |
| Barrier          | 761          | 4515              | 4480             | 35       | 20,000         | 7 (5)                    |
| Ghost            | 2855         | 3910              | 3885             | 25       | 75,000         | 7 (6)                    |

- (1) Value of stored water used through Cascade, Kananaskis, Horseshoe, Ghost and Bearspaw.  
 (2) Value of stored water used through Three Sisters, Spray, Rundle, Kananaskis, Horseshoe, Ghost and Bearspaw.  
 (3) Value of stored water used through Interlakes, Pocatererra, Barrier, Kananaskis, Horseshoe, Ghost and Bearspaw.  
 (4) Value of stored water used through Pocatererra, Barrier, Kananaskis, Horseshoe, Ghost and Bearspaw.  
 (5) Value of stored water used through Barrier, Kananaskis, Horseshoe, Ghost and Bearspaw.  
 (6) Value of stored water used through Ghost and Bearspaw.

TABLE II-2

## ELECTRIC UTILITY GENERATING CAPACITY IN ALBERTA

(At December 31, 1972)

|                                          |                         | Nominal<br>Capacity<br>MW |       |
|------------------------------------------|-------------------------|---------------------------|-------|
| <u>Alberta Power Limited</u>             |                         |                           |       |
| H.R. Milner                              | Coal-fired steam        | 150                       |       |
| Battle River                             | Coal-fired steam        | 225                       |       |
| Drumheller                               | Coal-fired steam        | 16.5                      |       |
| Vermilion                                | Gas-fired steam         | 10                        |       |
| Simonette                                | Gas-turbine             | 20                        |       |
| Sturgeon                                 | Gas-turbine             | 18.5                      |       |
| Rainbow                                  | Gas-turbine             | 60                        |       |
| Fairview                                 | Gas internal combustion | 6                         |       |
| Various Isolated Plants                  |                         | 18                        | 524   |
| <u>Calgary Power Ltd.</u>                |                         |                           |       |
| Bow River Plants                         | Hydro                   | 325                       |       |
| Cascade                                  |                         | 35.9                      |       |
| Three Sisters                            |                         | 3.0                       |       |
| Spray                                    |                         | 102.8                     |       |
| Rundle                                   |                         | 49.9                      |       |
| Interlakes                               |                         | 5.0                       |       |
| Pocaterra                                |                         | 14.9                      |       |
| Barrier                                  |                         | 12.9                      |       |
| Kananaskis                               |                         | 18.9                      |       |
| Horseshoe                                |                         | 13.9                      |       |
| Ghost                                    |                         | 50.9                      |       |
| Bearspaw                                 |                         | 16.9                      |       |
| Brazeau                                  | Hydro                   | 355                       |       |
| Bighorn                                  | Hydro                   | 120                       |       |
| Wabamun                                  | Coal-fired steam        | 528                       |       |
| Wabamun                                  | Gas-fired steam         | 66                        |       |
| Sundance                                 | Coal-fired steam        | 300                       | 1,694 |
| <u>City of Edmonton (Edmonton Power)</u> |                         |                           |       |
| Rossdale                                 | Gas-fired steam         | 345                       |       |
| Rossdale                                 | Gas-turbine             | 60                        |       |
| Clover Bar                               | Gas-fired steam         | 165                       | 570   |
| <u>City of Lethbridge</u>                |                         |                           |       |
| Lethbridge                               | Gas-fired steam         | 13                        |       |
| Lethbridge                               | Gas-turbine             | 20                        | 33    |
| <u>City of Medicine Hat</u>              |                         |                           |       |
| Medicine Hat                             | Gas-fired steam         | 38                        | 38    |
| Total Utility Generating Capacity        |                         |                           | 2,859 |

## QUESTIONING BY THE AUTHORITY

MR. KINISKY:

I have just the one question and it concerns the demands on water. When we look into the future, it appears that there is going to be more and more irrigation going on with a peak demand during the summer months, while at the same time there will be a greater and greater demand for hydropower which has its greatest demand during the winter months. When the situation gets to this stage, how are we finally going to solve the problem?

MR. STANLEY:

I don't think there is any conflict here because of the quantities of water which are basically available. We are now using, through our hydro plants, all the water there is. We are generating power with it, with the exception of Ghost and the main Bow River plants where we spill all our storage reservoirs. We use all the water. We do not spill it. Therefore, there is no more power available from it.

The question of irrigation hinges on the agreement of the Alberta government with the rest of the Prairie Provinces on how much water will be released downstream. The other aspect is that in the high water season of June and parts of July, it would be impossible to divert it to the land. That water is caught and spread over the year.

MR. DOWLING:

On page 2 of your brief you refer to 11 hydro-electric plants supplying 60 per cent of the province's electric power requirements. This is on the Bow River. On page 3, the brief reads, "80 per cent of the province's electric power is supplied by large thermal units," and it states where. In my calculations that makes 140 per cent.

MR. STANLEY:

Actually, that is the company's service area on page 2. That is the company's load. It's not the provincial load. I'm sorry for that error.

In the other one we're talking about the whole province. Our electric system supplies 60 per cent of the province - the Calgary Power system, not the hydro system. The Calgary Power system supplies 60 per cent of the province, but 80 per cent of the whole province comes from thermal units.

MR. DOWLING:

I wonder if you could comment on underground transmission lines for us?

MR. STANLEY:

It all boils down to one question - cost.

MR. DOWLING:

It's very costly, I assume.



MR. STANLEY:

It's very, very costly, particularly when you get to high voltages.

DR. TROST:

Do you feel that the objectives of watershed conservation are better served or more poorly served by hydro development?

MR. STANLEY:

I think they are better served because we are conserving the water. We are catching the water during the big run-off season when it would go down the river as a useless flood, creating bank erosion and problems downstream.



279-1

SUBMISSION

presented by

SPRAY LAKES SAWMILLS LTD.

to

ENVIRONMENT CONSERVATION AUTHORITY  
OF ALBERTA

on

LAND USE AND RESOURCE DEVELOPMENT  
IN THE EASTERN SLOPES

JUNE 1973

Presented By: L.L. Kennedy

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COMPANY HISTORY

Our company is a family one, with interests in the foothills area since 1905, when the Mjolsness family homesteaded in the Sundre district west of Olds. The family has been involved in the logging business since 1914, when our father Louise Mjolsness worked for the Great West Logging Co. at Bergen. It was in 1943 that we started logging west of Sundre under the name Mjolsness Bros. Ltd. The Company has always been a family one, and its employees are generally all from the local communities.

Involvement in the immediate area of concern began in 1953 when License Timber Berth 417K was purchased from Eau Claire Sawmills Ltd. and the name was changed from Mjolsness Bros. Ltd. to Spray Lakes Sawmills Ltd. Since that time we have established a permanent camp in the Spray/Kananaskis Lakes area and a permanent mill at Cochrane. There is a permanent staff of approximately 75 on a nearly 'all year round' basis.

We have withstood the many 'ups and downs' inherent to the timber industry over the past decades; we have been able to remain viable and have every hope of continuing to in this fluctuating industry of ours. Anyone knowledgeable of our industry can well appreciate the problems we've faced over the years.

We have an annual payroll of over \$500,000.00, an annual Government royalty on timber of well over \$100,000.00 and an additional input into the community of over \$300,000.00 in the form of power and utility requirements, fuel, oil, repairs, maintenance and supplies.

PRESENT POSITION

We have been logging and manufacturing some 10MM FBM per year of timber during the last few years. Our total source of timber gives us an annual allowable volume of 15MM FBM but today we are particularly concerned with one specific area - the B2 Management Unit. This is the area in which we have done our past logging, in which we are presently logging in which we have been assigned our Quota volume for the next four years and for which our pre-planning, camp construction, road location, have been done.

Because the provincial government has granted us this area in the form of timber licences, we embarked last year on an expansion program in Cochrane. We are presently building a completely new and very modern manufacturing plant that is expected to have a final cost of over \$1,000,000.00. With this mill in operation our annual payroll is expected to exceed \$700,000.00 with a comparable substantial increase in royalties. There will also be the increased monetary flow to the community in general.

You are aware of the fact that since the Timber Quota System came into effect in Alberta in 1966, reforestation of all logged over areas has been a necessary requirement at the expense of the operator. We have taken it upon ourselves to carry out much of this work though we could have paid the Alberta Forest Service \$2.00 per M FBM to have the work done for us. A method of ground disturbance called 'scarification', along with natural seeding, has been our primary system. However, we are well aware of the fact that not all cut-overs can be regenerated by this method alone. (Appendix 1). We therefore carried out cone collections and the seed is being held in storage at the Provincial Tree Nursery where seedlings will be grown for our use on any 'fail' areas.

We also carry out erosion control measures on all our logged over areas and logging roads where necessary. Problems have been minimal, but if needed we have always found the staff of the Alberta Forest Service ready to help us solve these problems and offer guidance. We endeavor to keep our number of stream crossings to a minimum. Where a fish population is in evidence we locate and establish either suitable culverts or bridges, utilizing direction from both the Alberta Forest Service and Calgary Power Ltd. Under present regulations all logging near water courses is restricted.

We recognize and appreciate the need for wilderness and other recreational areas. Our main roads, logging and skid trails and cutovers, provide access and are heavily utilized especially by: people with snowmobiles, cross country skiers, hikers, climbers, hunters, fishermen, school groups and the general recreationist. We believe this providing of access helps to meet the ever increasing demands of those seeking in their various ways, some sense of solitude.

Our logging roads help as a means of access for insect, disease and fire control - we have detected and extinguished fires ourselves that could have laid waste to much of the area. In addition, our experience in the area, our equipment and men, have been - and would be - the first to be called upon in the event of fire.

We continually strive by every means possible for a high lumber recovery from our logs with a maximum utilization of wood fiber - let me elaborate. All of our logs are debarked. This allows us to chip all edgings, slabs and trim blocks that formerly went to the burner (the latter has now been eliminated).



Chips are sold to IKO Industries in Calgary for use in insulation board. Shavings are also sold in the Calgary district, primarily for insulation in the attics of new homes, but also for poultry and livestock bedding. Both sawdust and bark too are being sold for use as bedding in feedlots. We are confident that our Company can continue to dispense with all of our mill 'by-products' (which were formerly waste) in this manner.

OUR CONCERNS

As previously stated our immediate concern is for that area lying south of Spray Lake, much of which is included in the total area of the Preliminary Development Plan titled "Assiniboia". It is not our position to argue the merits of such a recreational proposal at this time since we fully appreciate the need for such areas throughout the province. However, it must be understood that our Company has been granted a right in this area, one that was initiated some 20 years ago, one that was fortified when the Quota Timber System commitments were established in 1966, and even more recently when licences L15 and L17 were granted to us.

Our record in the area speaks for itself, but, it must be understood that in order to read that record with any degree of accuracy, one must consider the various regulations, etc. in force at each particular period of time. The cutting restrictions enforced by the Government had changed fairly frequently prior to 1966, necessitating changes in the light of the more recent information, regarding our environment. As an example, the minimum stump diameter has been reduced from 14" to 10", which resulted in much better utilization. Frankly speaking, this meant a change from a so called merchantable clear cut or 'high grade cut' to a totally useable clear cut. At the same time, patches for logging were restricted to a maximum of 40 acres, with only 50% removal of the available timber from a license but it should be noted that with other restrictions such as degree of slope (max. of 45%) and altitude (max. of 6500 ft.) a timber reserve far greater than 50% remains. This aides the watershed and game management programs to a degree, as well as the successful regeneration of the cut-over areas - especially spruce.

Reiterating somewhat, the entire first cycle quota timber for the next four years. Our camp, access roads, etc., have been established at much cost, relying on this source of raw material for our mill (see Figure 1). As you can appreciate from Figure 1, the area is not large but it is the only block of merchantable material available in the B-2 Management Unit, that can satisfy the Quota volume that has been granted us for the immediate future. You can, therefore, see our special concern since there is a lack of such material in our entire Quota area.

This is old growth timber, timber that should be utilized before it becomes insect infested, decays and wastes away. We believe it is only sensible to renew this area with vigorous young growth that will continue this sustainable resource for the future use and enjoyment of the people of Alberta.

We are prepared to work in co-operation with any other users of the area. We feel very strongly that there is a place for all of us and that we can compliment, rather than distract from each other in most instances.

CONCLUSIONS

Our total expansion program and expenditures of over \$1,000,000.00 has been made with the Government's assurance of the timber in the area south of Spray Lake. The entire concept of the Quota Timber System has given stability to a hitherto "cut out - get out" system, stability that applies throughout the entire community, as is demonstrated by our permanent installations and our monetary input into the community. We cannot return to the days of the early logger who was continually on the move looking for timber.

We must emphasize the fact that there is a shortage of merchantable material with which our Quota can be sustained, a sustainment that we have counted upon and have been assured of by the Government.

We have tried to do our part in the past and have been working diligently in order that our logging methods meet the needs of the Conservation Guidelines as utilized by the Provincial Government. An honest effort has been made in regenerating our cut-overs with an interest that has been high from the beginning.

The need for recreational areas is realized - we feel that need ourselves. You only have to visit our logging roads on weekends and other holidays to see the use made of them. We feel this is a positive start towards 'integrated use'.

As was noted earlier it is not that we are against any specific recreation complex, it is only that we have already expanded and developed our Company on the basis of the results of timber surveys carried out during the past few years. Plans have been made, expenditures have been made, all on the premise that certain areas of timber would be available to satisfy our Quota.

Since this area has already been assigned to us it does not seem right that another commercial user can also be granted this area, especially if the uses are not compatible.

In conclusion, we therefore ask that our present needs be thoroughly considered; that our past operations be thoroughly reviewed and the fact that the Government has already committed the area to us, be considered in the deliberations of these hearings.

Respectfully submitted,

Spray Lakes Sawmills Ltd.

Appendix 1

|                                                                   |       |                |
|-------------------------------------------------------------------|-------|----------------|
| Total acreage cut over since initiation<br>of the Quota System    | ..... | 1750 ac.       |
| Total Volume manufactured since initiation<br>of the Quota System | ..... | 32,500,000 FBM |
| Company Reforestation Responsibility                              | ..... | 1500 ac.       |
| Total acreage scarified to date                                   | ..... | 748 ac.        |
| Construction cost (1953-54) -<br>18 miles of main haul road       | ..... | \$ 54,000.00   |

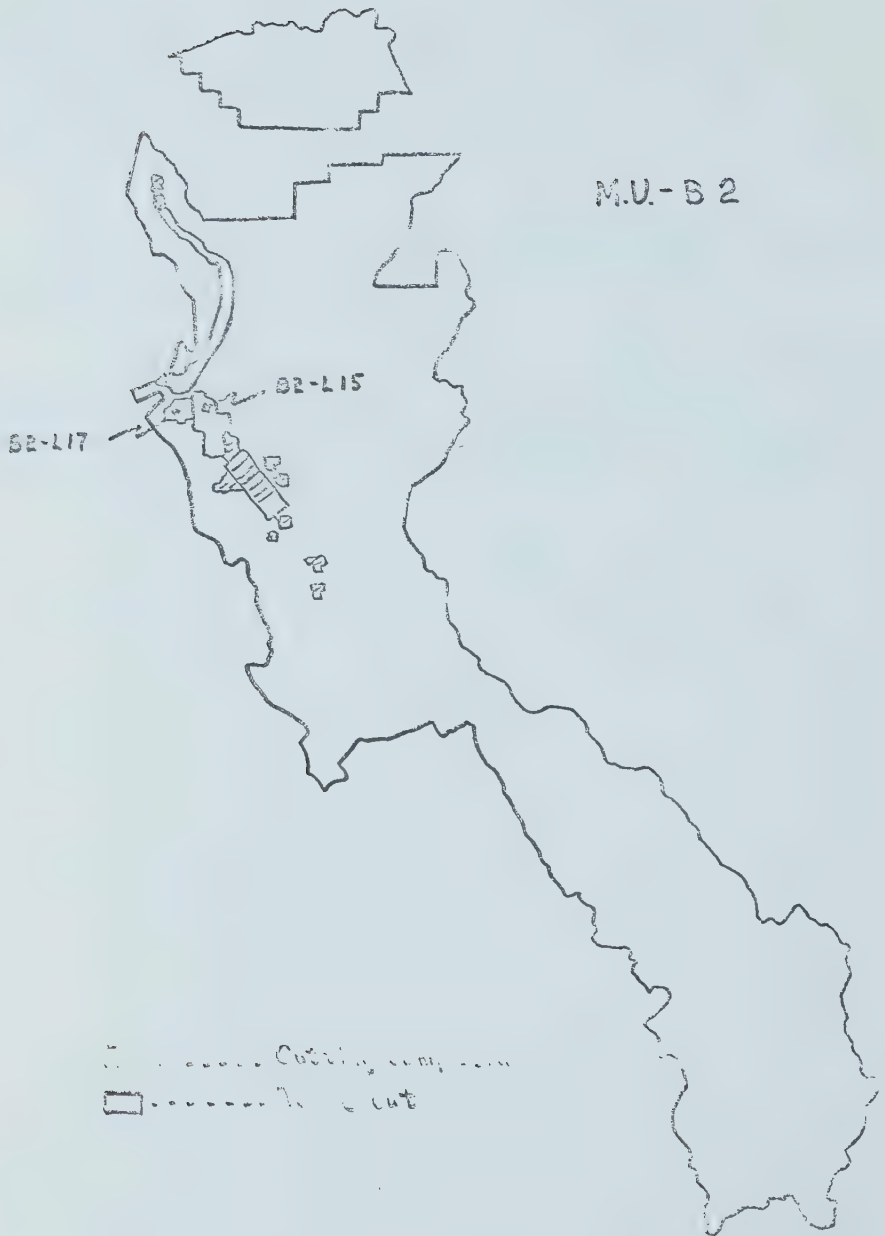


Figure I



## QUESTIONING BY THE AUTHORITY

MR. KINISKY:

Have you had any discussions at all with the Assiniboia people concerning any incompatibilities which may exist if indeed both projects went ahead?

MR. KENNEDY:

Not that I know of specifically. They have inquired of us at different times and gone into the area with our knowledge.

MR. KINISKY:

So there has been no discussion with them at all?

MR. KENNEDY:

There have been no discussions to date.

MR. DOWLING:

Could you give us an appraisal of what effect your timber harvesting has had on the watersheds in the areas where you've actually worked?

MR. KENNEDY:

That would, perhaps, take a little bit of history. The effect of the early cut-overs, which were logged by horse, was to enhance the watersheds. I must go back a little there, too, and say that the early cut-overs with the 14 inch diameter limit, amounted not to a selective cut as such, but left quite a large residue on the areas cut over. Those areas were probably quite large, much larger than the 40 acres that is now a maximum. Yet because of the higher stump diameter, there would be more residual material. It might be likened a little to a selective cut, though it would not be described as such.

There is no doubt that there would have been a few larger clear-cuts during the course of history that may not enhance either the quality or the time of snowmelt in the areas, but perhaps from a reservoir point of view would allow more water with a higher pack in the cut-over areas, but I'm no authority in that regard.

MR. DOWLING:

Now that the stump diameter has been reduced to 10 inches, how do you feel this is going to affect our watershed protection?

MR. KENNEDY:

If the alignment of clear-cut blocks or strips is such that it takes into consideration the requirements of watershed, I think it can be a very good thing for watershed management.

I would just add one thing that no doubt the future cutting in these areas will affect the Marmot watershed basin when it is logged. Resumes or reviews of the watershed cuttings that have taken place in the Colorado area of the United States will give an idea of the effects.

MR. DOWLING:

Have you actually started your cutting in the Assiniboia area?

MR. KENNEDY:

Roads have gone into B2,L15 and to a portion somewhat east and south of the Assiniboia area. The only logging done in the B12,15 has been prelogging of that main haul road. That's all the logging done to date.

DR. TROST:

You are working on a sustained yield basis, so that you try to harvest the forests at the rate at which they regenerate. Now, you've been operating for quite a long time and have been doing your own replanting as well as natural replanting. Do you now feel that the rate at which your forest is regenerating is at the level you assumed it would be? In other words, are you actually working at a steady state level?

MR. KENNEDY:

The companies resumed responsibility for regeneration only in 1966. Approximately half the area has been treated and surveys are being carried out this summer. In fact, I think some of them are going on at present, which would indicate whether the regeneration in those logged-over areas is satisfactory or not.

The early logging done prior to 1966, especially allowing for the higher stump diameter with the residual material and the long time involved in natural regeneration is coming back in quite well. I'm sure that you would find some areas, especially in clear-cut blocks, where the regeneration is not adequate. At the same time the provincial regulations allow for a ten year period for adequate regeneration in those areas. Surveys must be carried out in the sixth or seventh year, and if the surveys show that regeneration is not there, something must be done to bring it up to the standard that the provincial government sets.

DR. TROST:

You're not getting any early indications that you may have to have a larger acreage or leasehold to get the same yield as time passes?

MR. KENNEDY:

No, I think that in future we won't be waiting for the old growth material that we now have in that particular area. I would think that generally we are going to a smaller stump diameter. This is happening to quotas to the north of this particular area. They're logging down the four inch stump rather than the ten inch stump. I think in the future we will see a great deal more of this, in order to satisfy any quota.

DR. TROST:

So, you'll cut them at the stage where they grow the most quickly?

MR. KENNEDY:

There is a growth curve which shows optimum growth for a particular stand of trees at a particular age, and it is at that point when most management plans the rotation systems. The rotation system is based on that point.

R. Marshall summarized the  
CanPac Minerals Ltd. brief  
presented formally in Leth-  
bridge.

DR. TROST:

We've questioned this presentation in detail before in Lethbridge and in the Crowsnest, we will not question it further now. But we did think it should be made for the general information of the people here.



283-1

ARCHAEOLOGICAL SOCIETY OF ALBERTA



CALGARY  
CENTRE

BRIEF BY  
ARCHAEOLOGICAL SOCIETY OF ALBERTA  
CALGARY CENTRE

IN REFERENCE TO:  
LAND USE AND RESOURCE DEVELOPMENT  
IN THE EASTERN SLOPES

Presented By: D.B. Coutts

CALGARY  
JUNE 18, 1973



## ARCHAEOLOGICAL SOCIETY OF ALBERTA

CALGARY  
CENTRE

#814; 3130 - 66th Avenue S.W.  
Calgary, Alberta  
June 18, 1973

To: The Environment Conservation Authority

Re: Land Use and Resource Development in the Eastern Slopes

1. We welcome this opportunity to re-emphasize some of the concerns and recommendations regarding archaeological resources in Alberta as previously submitted to the Authority on December 21, 1971 and May 29, 1972 at public hearings in Calgary.
2. Location and Nature of Archaeological Resources:
  - (a) The eastern slopes and foothills areas of Alberta are rich in archaeology. Historic and pre-historic trails and travel routes run through the area, and these are dotted with camp sites of varying antiquity and degrees of archaeological significance.
  - (b) The nature of the terrain places limitations on the amount of useable land and feasible travel routes, and so leads to a concentration of these sites.
  - (c) Archaeological resources are non-renewable. In most cases they are not suitable for restoration in situ or reconstruction elsewhere. Only a very limited number would be recommended for indefinite preservation.
3. Value and Use of Archaeological Resources:
  - (a) The value of archaeology lies in the controlled excavation and interpretation of sites, and recovery for study of ALL artifacts contained BEFORE the site has been disturbed or destroyed by industrial, commercial or governmental construction; agricultural use; or natural erosion.
  - (b) There is no written history of Alberta or Albertans - resident or transient - prior to the latter part of the 19th century. Archaeological sites supply the only reliable record we have of residence, migration, land use, resource exploitation, and commerce for the period between the last glaciation and the arrival of the NWMP and the CPR.

The Environment Conservation Authority

(c) An interpretive centre at a site of major importance - a display of artifacts recovered - even a highway sign or cairn designating and describing a major site - all these are (or could be) tourist attractions of no small significance to our provincial economy.

4. The same factors of the terrain that have led to a concentration of archaeological sites in the area of the eastern slopes also contribute to their destruction:

- (a) Present day surveyors will tend to locate base camps and work camps in the same locations as ancient camp sites, which are inevitably destroyed in the construction process.
- (b) Present day highways, access roads, work trails, rail lines and pipe lines will tend to follow ancient travel routes and to obliterate all sites along the way.
- (c) Most sites are located on the banks and benches of streams. All too often industrial or commercial activity will affect stream beds by increased run-off and/or channel diversion. Increased bank erosion results and this in turn is a major factor in destruction of sites.

5. We again wish to emphasize that we are NOT campaigning for wholesale protection and preservation of archaeological sites, nor to obstruct any or all development. This brief does not oppose any of the specific projects outlined in the notice regarding public hearings. BUT - we do consider it essential that prior archaeological survey and salvage where warranted, to be funded by the developer, should be a basic and absolute condition to the granting of any permits for exploration or construction of any kind.

6. This brief is addressed to the Authority at the public hearing in Calgary in regard to the Bow River Watershed Basin. It is not our intention to take up the time of the Authority by re-submitting the same or similar briefs at other hearings concerning the Bow or other Watershed basins. However, we would like it taken into your record that the same points at issue in the preceding paragraphs are equally applicable to all five river basins now being examined, and that this Centre does have direct interest in the northern portion of the Oldman Basin and the southern portion of the North Saskatchewan Basin, and concern for the archaeological resources located therein.

The Environment Conservation Authority

7. In conclusion, we ask that paragraphs from the Report and Recommendations of the Authority regarding The Conservation of Historical and Archaeological Resources in Alberta listed below be accepted as an Appendix to this brief:

- (a) - page 9 - Section 1 (Summary) - para 1.6 The Present and the Past.
- (b) - page 13 - Section 2 (Report of The Public Advisory Committee) - para 2.2.1 Archaeological Resources.
- (c) - page 17 - para 2.5.1 Construction.
- (d) - page 30 - Section 3 (The Public Hearings).  
- para 3.4.3 Salvage.
- (e) - page 87 - Appendix 1 (Proposed Bill).  
- para 7 (1) - Preventative Measures.

Your consideration of the points raised in this brief is respectfully requested.



Calgary Centre  
Archaeological Society of Alberta  
Arthur G. Randall, President

ADDENDUM

The Chinook Country Chapter, Historical Society of Alberta, wish to be recorded as being in complete agreement with the brief submitted by the Calgary Centre, Archaeological Society of Alberta, and ask that this statement of endorsement be regarded as a separate brief of identical intent.

The Chinook Country Chapter  
Historical Society of Alberta  
Grant L. Weber, President

## QUESTIONING BY THE AUTHORITY

DR. TROST:

In a general way, do you feel that The Heritage Act and the report and recommendations from the previous hearing have covered your salient points?

MR. COUTTS:

Yes, I believe so, sir. I think that the new Heritage Act, as Dick Forbis said this morning, can be workable if it is in fact implemented in full. Our only regret was that Chapter 5, Paragraph 22, subparagraph 2, in which the recommendation of a prior survey for archaeological resources be made, does not specify where the money for that is going to come from. It is our feeling that it should come from the developers.



284-1

WATERSHED RESEARCH IN THE  
EAST SLOPES

A Brief Submitted By The  
Steering Committee Of The  
Alberta Watershed Research Program

for  
Public Hearings Held By The  
Alberta Environment Conservation Authority  
on  
Land Use and Resource Management in the Eastern Slopes

Presented By: D. Storr

#### A. Need for Watershed Research in the Eastern Slopes

The importance of the mountains and foothills of Alberta as a water producing area cannot be over-emphasized. This area is the headwaters of the South and North Saskatchewan Rivers draining through the main areas of population into Hudson's Bay, and also the headwaters of the Athabasca and Smoky Rivers draining northward into the Arctic. Using the South Saskatchewan as an example, it has been conservatively estimated that 90% of its natural flow originates in the mountains and foothills of southern Alberta. It follows then that a great responsibility rests on all levels of government to so manage this vital resource area as to provide maximum benefits for the people, both now and in the future.

An adequate and reliable supply of usable water is essential for municipal, agricultural, and industrial use in the province downstream from the producing area, and also for recreational and industrial use within that area. Downstream users are concerned with the quantity, quality, and timing of the streamflow. Headwaters users are concerned with these same factors and also the effect of land use on the local environment. The needs of the downstream users of Saskatchewan River water differ from those on the northward flowing system, but they vary only in degree, not in kind.

If precipitation is normal or higher, there is no shortage of water in Alberta under present requirements, but in dry years the demand in southern areas might exceed the available supply. To illustrate, under the Apportionment Agreement with Saskatchewan, Alberta is entitled to use a minimum of 2.1 million acre-feet from the South Saskatchewan River each year. In a year of normal rainfall, the irrigation demand for present acreage is about 1.2 million acre-feet but in a very dry year could approach 2 million. This would leave only 0.1 million acre-feet to meet the needs of industry and the municipalities, and serious conflicts would arise. It is therefore apparent that without an increased supply or improved internal management, there is little room for growth.

Reservoirs and diversions may be necessary for one purpose and one time and space scale, but they are frequently accompanied by unwanted side-effects, and should at best be regarded as expedients. It has been well established that management of the upper watersheds can do much to increase total yield, regulate flow and maintain high quality. Specific research is therefore required to evaluate and improve land management practices on the East Slopes in Alberta and



their effects on both the downstream and local uses of the water. Such research is the function of the Alberta Watershed Research Program.

#### B. Background History of Watershed Research in Alberta

The importance of the conservation of the watersheds on the East Slopes, not only to Alberta but also to Saskatchewan and Manitoba, was recognized soon after World War II. The interprovincial nature of the problem led to negotiations between Alberta and the federal government, and eventually in 1947 to the establishment of a federal-provincial board whose responsibility was to attain the optimum flow of water in the South Saskatchewan River through management of the forest lands on its headwaters. The Eastern Rockies Forest Conservation Board soon realized the dearth of basic data and knowledge of ways to manage mountain watersheds in order to achieve the greatest amount of high quality water at the time needed. The Board was given authority in the Eastern Rocky Mountain Forest Conservation Act to arrange with other agencies for the carrying out of investigations and research, as well as conducting their own. A research program was finally arranged in 1960, when a multiple-agency, interdisciplinary, co-operative program called the East Slopes (Alberta) Watershed Research Program was started. Over the past 12 years a comprehensive watershed research program has been developed which has attracted international attention. In 1967, the program changed its name to the Alberta Watershed Research Program and expanded its area of interest to include all Alberta. Its primary concern however is in the area being considered by this hearing.

#### C. The Organization of the Alberta Watershed Research Program.

##### C.1. Objectives

The ultimate objective of the program is the improvement of quantity, quality and timing of streamflow by improved land management practices. This must be based on specific research under East Slopes conditions to:

- 1) gather basic data pertinent to the hydrologic cycle.
- 2) determine the relationships between the hydrologic components, i.e., how much streamflow is produced by a given quantity of precipitation, how much is lost by evaporation and transpiration, how much goes into storage and for how long?
- 3) evaluate the results of various forest cutting and replacement practices on water yield

- 4) to develop and test other practices or methods of protecting, improving, or reclaiming watersheds.

The objectives of each of the individual projects vary in detail to fit the needs of the situation.

#### C.2. Participants

The original East Slopes (Alberta) Watershed Research Program was composed of 13 provincial and federal agencies. Some of the originals have since withdrawn, and in 1973 Alberta is represented by Alberta Forest Service, Alberta Research Council, and Hydrology Branch, Dept. of Environment, The federal government is represented by Canadian Forestry Service, Atmospheric Environment Service, Water Survey of Canada, Canadian Wildlife Service, and the Department of Regional Economic Expansion. The Eastern Rockies Forest Conservation Board, a joint federal-provincial agency, was a very active participant until it was disbanded March 31, 1973. The 12 Conservation Unit Guides which it produced are valuable first steps in the application of watershed management principles to the East Slopes area. These are available from Alberta Forest Service, Edmonton. Two private enterprises, Calgary Power and Northwestern Pulp and Power Ltd. are also involved in some of the projects.

The program is directed by the Steering Committee, consisting of the heads of the eight federal and provincial agencies involved, and the Chairman of the Alberta IHD Committee. A Research Co-ordinating Committee, consisting of representatives of each of the agencies is responsible, with the concurrence of the Steering Committee, for the planning and implementation of research projects to solve particular problems. Each agency is responsible for the funding of its own responsibilities in the program.

#### D. Principles of Watershed Management Research

Watershed management has been defined as the application of scientific principles and business methods to the handling of all the resources in a watershed to assure optimum supplies of usable water, desirable streamflow, prevention and control of erosion, and the reduction of flood and sediment damages.

The scientific principles by which we understand the physical processes that produce the water flowing in our rivers are very complex. Streamflow, the usable product of this natural water factory, is the end result of a constantly changing interaction between precipitation, evaporation, transpiration

by vegetation, and storage in either snow and ice, surface ponding, or below ground. A complete understanding of the process requires precise quantifying of each of the above components. This is difficult and expensive for streamflow, and very difficult and expensive for precipitation. The storage, evaporation, and transpiration components cannot be measured directly but must be estimated by indirect methods, all of which require sensitive and precise instrumentation, and a detailed investigation of physical processes, which in some cases are at present incompletely understood.

Because of the complexity of the processes and the extreme variability in time and space of such factors as precipitation, solar radiation, air temperature, humidity, and wind which control them, it is necessary to concentrate studies on small catchment areas or basins. When the process of water production in the research basin has been thoroughly calibrated by quantifying each of the components over several time scales, then various land management practices can be tested with reasonable expectation of being able to explain the results scientifically. As examples, such land management practices as logging, agricultural cultivation, the construction of roads, seismic lines, ski slopes, and strip mining will affect such factors as the distribution of snowfall, the timing and rate of snowmelt, the amount of evaporation and transpiration, infiltration rates to groundwater, the timing and amount of streamflow, and hence the amount of erosion and consequently sedimentation and water quality.

It must be stressed that there is a continuous and complex interaction between these factors, and the results may be detrimental or beneficial depending on the details of the practices. For instance, clear-cut logging often results in an increase in total yield, but at the expense of higher peak flows and increased erosion and sedimentation. On the other hand, patch cutting can be designed to increase the yield without increasing erosion and sedimentation.

It must be obvious from this simplified description of the water production process that the watershed research underway by the Alberta Watershed Research Program is expensive and long-range. This will be demonstrated in the following section describing the various projects in their various stages of development.

## E. Projects

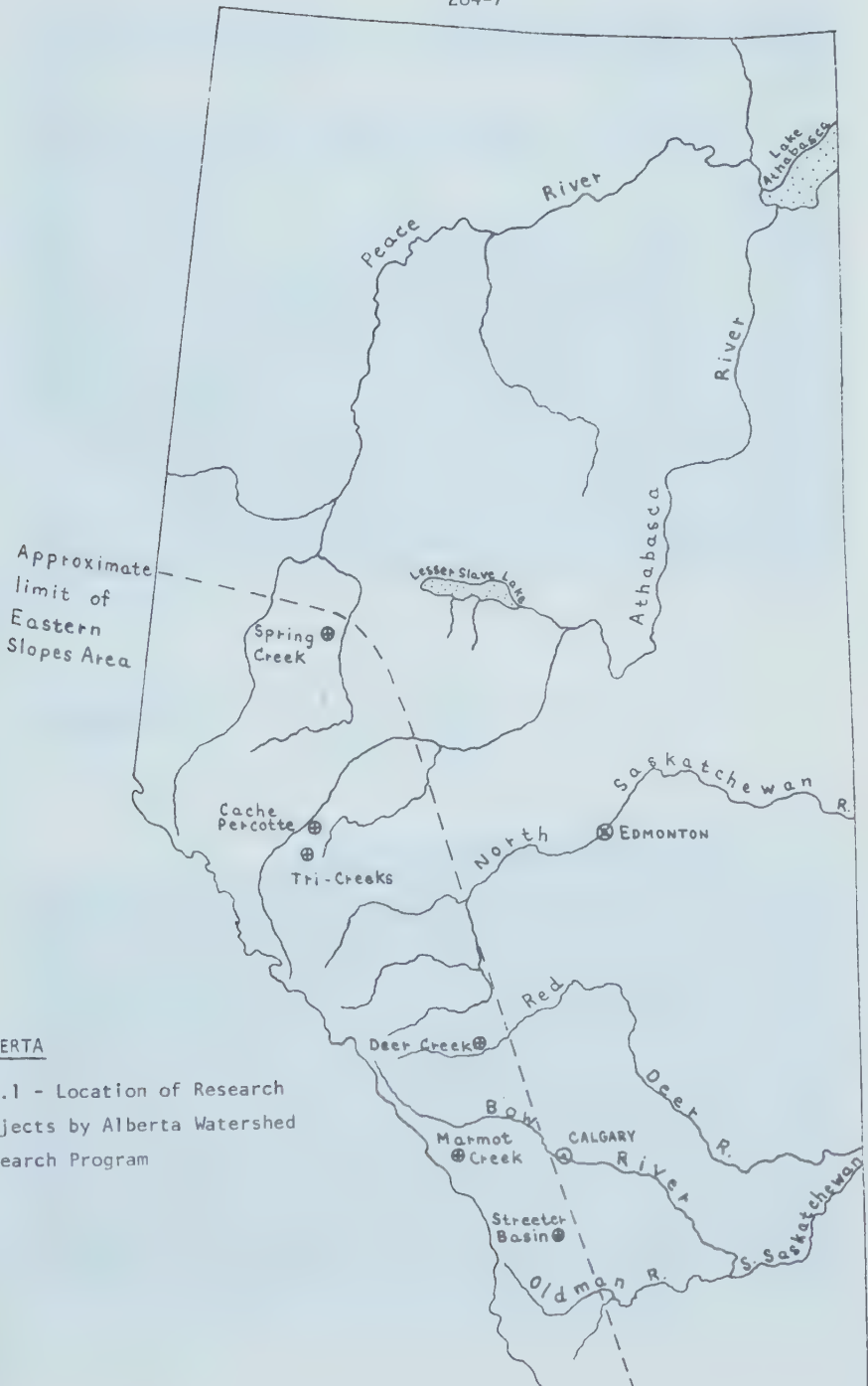
The following description of the six research projects in the program is brief and of necessity is over-simplified in some respects. Their locations are shown in Fig. 1.

### E.1. Marmot Creek

This mountainous watershed (Fig.2) of 3.6 square miles in the Kananaskis Valley was established in 1962 and is the pioneer in watershed research basins in Canada. Its objectives are two fold: one sub-basin will serve as a demonstration area for guidelines developed for Alberta Forest Service to demonstrate the effects of commercial logging practices on quantity and timing of streamflow, water quality and sedimentation; one sub-basin will be maintained in the natural state as a control, and one will serve as a laboratory to test experimental cutting practices to produce optimum streamflow with minimum erosion and sedimentation. After ten years of data collection and study of the processes, the basin is now calibrated and the first test cuts will be made this year. The data collected are already being used by scientists in many complex theoretical studies. To date something over \$2,500,000 in capital and operating funds have been expended. At least another 10 years of study will be required to reach all its objectives.

### E.2. Streeter Basin

This basin occupies 2.3 square miles in the Porcupine Hills southwest of Nanton (Fig.3). The ranchers in the area would like to replace the aspen forests with grass to increase the grazing capacity of their lands, but are concerned that this might cause the springs to dry up and so block expansion of their operations. The springs are fed by water which has infiltrated in certain recharge areas near the hill crests, and since most snow accumulates in the forests in this chinook prone region with very little in the grasslands, complete removal of the forests could result in a decrease in the snowpack over the recharge areas and a decrease in the flow from the springs. It has been found that small openings in poplar forests act as efficient snowtraps. One theory to be tested is the creation of small clearings over the recharge areas and the removal of the forest from the non-recharge areas. This should increase the forage capacity and also the flow from the springs. Because of many technical problems, it is doubtful that the basin will ever be as well calibrated as Marmot Creek, and scientific



# ALBERTA

Fig.1 - Location of Research Projects by Alberta Watershed Research Program



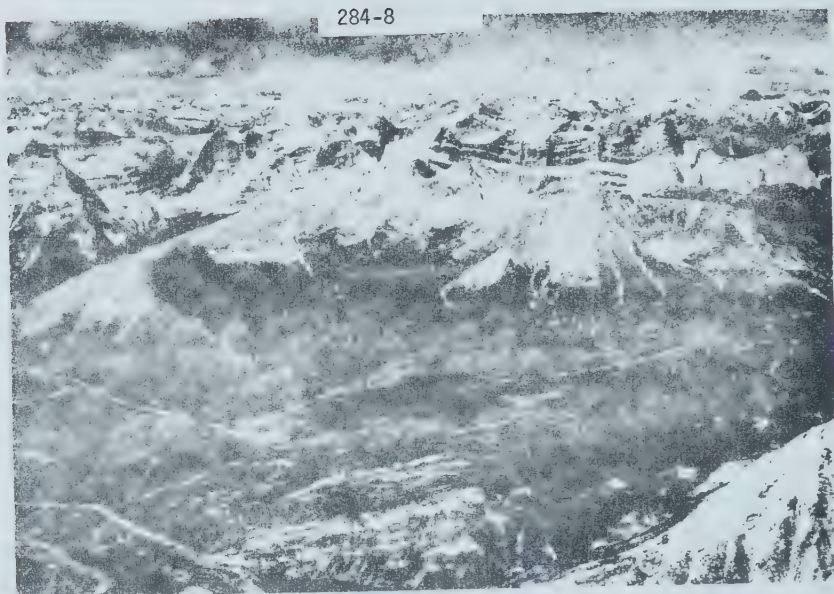


Fig. 2 Marmot Creek Watershed Research Basin



Fig. 3 Streeter Research Basin

proof of the hypothesis may be difficult or impossible. It is hoped however, to stage a practical, well-instrumented demonstration of the process which may serve as a guideline for the ranchers.

The effect of forest removal on wildlife is also very important. Wildlife research in Streeter Basin has concentrated on defining the value of various vegetation types, and the components of the topography to big game, beavers, small mammals and songbirds. The object is to provide data for a multiple-use planning which would give shared priority to production of cattle forage, wildlife and water in the East Slopes forest zone.

#### E.3. Deer Creek

This basin is 1.6 square miles in area about 30 miles southwest of Sundre. The project was started to study the effect of logging lodgepole pine on water production. Basic data on streamflow, precipitation, temperature, wind, and groundwater storage are being collected, but an integrated plan for future development has not yet been prepared.

#### E.4. Cache Percotte

This research basin of 3.75 square miles, near Hinton is operated by the Forest Technology School for two purposes:

- 1) The investigation of the water balance under natural forest conditions and the effect on the balance of systematic harvesting of the forest.
- 2) The basin serves as a training ground for the Forestry Technician students in the operation and maintenance of a network of hydro-metric, meteorological and groundwater stations, and in the techniques and procedures of data analysis.

This project began in 1964 and will probably continue for as long as there is a need for the Forest Technology School.

#### E.5. Tri-Creeks

This is a larger research basin, 23 square miles, about 5 miles north of Cadomin (Fig.4), established in 1965 on a 20 year basis by the Fish and Wildlife Branch of Alberta Lands and Forests. Because of the importance of sports fishing on the East Slopes, the project aims to measure and evaluate the effects of varying degrees and forms of clear-cut logging on the physical, chemical and biotic characteristics of trout streams in the Alberta Foothills.



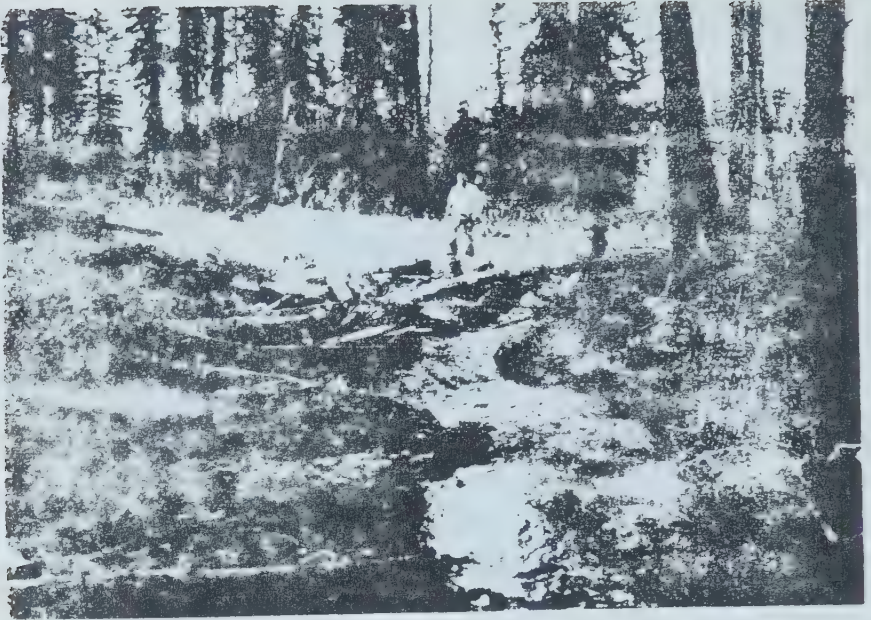


Fig. 4 Tri-Creeks Research Basin



Fig. 5 Spring Creek Research Basin

The results may be used to adjust the ground rules of Forest Cutting Practices which apply to a large portion of the foothills. Basic data on climate, streamflow, groundwater, suspended sediment, water chemistry, fish populations, and aquatic invertebrates have been collected. Because of several economic and technical reasons, calibration is proceeding very slowly and a study design for future treatment has not yet been prepared.

In 1971, Canadian Forestry Service began a study of the effects of pulpwood harvesting on water yield, physical water quality, and streamflow regime over much of the area of the Northwestern Pulp and Power Ltd. lease near Hinton. To some extent, this large scale project and the Tri-Creeks project overlap and each should provide some data useful to the other. This large scale project is a shorter term than most and it is hoped to be completed by 1977.

#### E.6. Spring Creek

This is another large (43 square miles) research watershed, about 20 miles southwest of Valleyview in gently rolling forested hills (Fig.5). The basin contains about 25% swamp, lakes and beaver ponds. The study was started in 1965 by Hydrology Branch, then of Dept. of Agriculture, now of Alberta Environment, with the initial objective of being able to offer sound advice on water problems if the area is opened for homesteading. Now this study is providing invaluable information on the hydrologic behavior of a middle-sized watershed in an area which until the outset of this project, was, from the hydrological point of view, virtually unknown. The major problems are likely to be the prediction and control of erosion. The basin is now essentially calibrated, and testing will begin as soon as a decision is reached on the type of development proposed. The project should be finished by 1980.

#### F. Related Studies

Studies related to particular phases of the objectives of each project, or to other research for the whole program of the sponsoring agency have been developed in or near many of the research basins. These include studies of evaporation and transpiration rates, soil and forest classification, hydro-metric techniques, groundwater storage, fish habitats and wildlife. As an ex-

ample, and because of its somewhat different orientation, a summary of the fish and wildlife research studies is presented here.

The Eastern Slopes provide excellent habitat for many northern fish and wildlife species, both game and non-game. The region consists of three main ecological zones; a grassland-forest transition zone in parts of the southern foothills and in the mountain valleys, an extensive coniferous forest zone, and high elevation sub-alpine and alpine areas. In the areas from the prairie parkland through the transition to foothills forest lie hundreds of miles of streams with the best of Alberta stream fish habitat. Big game and game birds occur extensively throughout the three ecological zones, distributed according to their requirements for food, shelter and escape terrain. Because of the wide variety in habitats, aided by the ameliorating influence of chinook winds which reduce snow cover, fish and wildlife populations of high quality and substantial size can be maintained. Fish are obviously dependent on water quality and quantity; big game and game birds also are dependent on water to maintain quality habitat.

Wildlife research activities have centered largely on analyses of the value of various vegetational types to mammals and birds; fisheries research has been more directly connected to water quality and stream flows, as they affect ecological requirements of the various species of fish found throughout the area. The goal of both wildlife and fisheries research is to gain an ability to predict the impact of watershed treatments proposed for watershed management on terrestrial, arboreal or aquatic species, both vertebrate and invertebrate. Most of the wildlife-related research has centered on the Streeter Basin and surrounding area. Fisheries research has been carried out in a number of locations, with heavier emphasis on fisheries now shifting to intensification of work in the Tri-Creeks basin.

Wildlife-related watershed research has strongly indicated the importance of the kind and pattern of vegetation types in providing for intensive wildlife use. Stream hydrology research has shown the extreme importance of road systems in their effects on stream sedimentation. Management of land on the East Slopes for timber production, cattle range or mineral exploitation has profound effects on the fish and wildlife resources.

All of these activities are capable of modifications that would reduce the harm done to wildlife or fish habitat. Of particular significance is the possible deleterious modification of surface stream flows and water quality with direct effects on fish, but also with possible serious indirect effects on birds and mammals.

Because of the heavy dependence of resources such as fisheries, wildlife and recreation on adequate supplies of water of good quality, it is an important matter of public policy to determine the priority to be given to these water-related resources in multiple-use management plans for the watersheds of the East Slopes.

RECOMMENDATIONS

We, as a committee, recognize that the East Slopes area must be used for many purposes; the production of water, various forms of lumbering and agriculture, the extraction of its mineral and petroleum resources and various recreational activities including hunting and fishing. This however places great demands on management in establishing priorities and increases the need for purposeful research. Therefore we respectfully draw the attention of the Environment Conservation Authority to the importance of watershed management research.

As a committee, we make the following recommendations:

- 1) Water, in the long term, is the most important renewable ~~resource~~ resource of the East Slopes affecting economic and social conditions even in distant downstream areas; wood products are also a primary renewable resource of great economic significance. The objective of land management practices in the principal wood production areas of the East Slopes should be the treatment of these two major renewable resources in a co-ordinated manner to maximize total economic and social benefits.
- 2) The established research basins should be utilized only for approved research programs, and activities which would adversely affect these programs should not be permitted.
- 3) The watershed research program should continue to be supported financially.
- 4) The expertise of the Alberta Watershed Research Program should be utilized by provincial agencies and other interested parties when hydrologic problems arise.



## QUESTIONING BY THE AUTHORITY

MR. KINISKY:

Has your group carried out any activities at all as to what happens as far as exploration is concerned with water yield, the quality and quantity, and so on?

MR. STORR:

The quality, yes. There have been studies done on the effect of road construction and seismic lines on quality. I don't know of any that are being done on the quantity of water.

MR. KINISKY:

Could you tell us quickly what that did to the quality of the water?

MR. STORR:

From what I have seen road construction is one of the worst offenders in causing erosion and sedimentation. The Swan Hills area in particular is a nightmare.

MR. KINISKY:

I know that you people are very jealous of the basins that you're working in, and you're talking about restricted activities and the things that adversely affect your programs. What sort of things happen that interfere with your work?

MR. STORR:

There are two classes of problems that we have run into. One was our friendly strip miner who showed up one day. CanPac had a lease to develop the coal mine on Marmot Creek. They wanted to move in with their bulldozers the next week. We objected vigorously. They finally came to some sort of agreement. I believe there was an interchange of leases or something like this. It was rather touchy for a short period. It caused us a lot of concern, as you can understand.

MR. KINISKY:

So in fact, after ten years of research in a particular basin, you don't actually have any protection that stops extractive industries from coming in and wrecking the ten year effort?

MR. STORR:

That was the situation then. The other trouble we ran into was vandalism by the general public. We don't like to keep people out of our research bases. We'd much sooner educate them as to what we're doing so they can appreciate it, but when you go in and find your rain gauges are kicked over, your thermometers are broken, and your evaporation pan has been filled up with mud, it destroys your record completely for a period of weeks. When anemometers are shot with rifles then it gets beyond minor damage. It's plain malicious. I guess you'd call it stupidity - maybe I'm being too blunt.

At Marmot Creek we've had an Order-in-Council passed closing it to the public. We hated to do it, but it was the only way. I'd like to see the principle that we can get protection recognized.

DR. TROST:

In your recommendations you indicate the need for continued support for the Watershed Research Program. Are you in danger of dissolving now that the Eastern Rocky Forest Conservation Board, which helped start your program, has been disbanded?

MR. STORR:

No, the only reason I put that in was because we have five provincial agencies which are cooperating in this program, Alberta Forest Service, Alberta Research Council and I've forgotten the others.

The federal agencies are still providing support but I would hope the provincial government would continue to back the provincial agencies in this program.



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BRIEF

TO

THE ENVIRONMENT CONSERVATION AUTHORITY  
ALBERTA

PRESENTED AT THE PUBLIC HEARING REGARDING  
DEVELOPMENT OF THE EASTERN SLOPES OF THE  
ROCKY MOUNTAINS, BY:

J. PRICE  
THE CALGARY FIELD NATURALISTS' SOCIETY  
P.O. BOX 981  
CALGARY, ALBERTA

JUNE, 1973

INTRODUCTION:

The Calgary Field Naturalists Society acknowledges the economic importance of the forests to Alberta and to Canada as a whole, in providing the material for forest products industries and employment of people in these industries. It appreciates the dependency of the prairie rivers on the forests which protect their headwaters. It agrees that moisture for prairie agricultural areas, water for industry and domestic use in cities and towns, streams for generating power, lake level control for commercial fishing, and shelter for wildlife are important products of the forest. It is convinced that the recreational potential is its greatest resource, offering Albertans a quality of life not found in cities and towns, and offering the economy greater returns through a well-integrated tourist industry.

The Forest Reserves Act of 1910 gives us the purpose of the Forests - I quote: "All forests within the Province are set apart and established for the conservation of the forests and other vegetation therein and for the maintenance of conditions favorable to an optimum water

supply." Perhaps, over the years, we have lost sight of this purpose.

Some of the current and proposed land uses of the Eastern Slopes complement each other and can be pursued without interference to others - e.g. watershed conservation, domestic water supplies, wildlife and fishery management, wilderness and natural areas, preservation of archaeological and historical sites, and research. Many, like urbanism, oil, gas, and mineral exploration and development can conflict with the first list. Some, especially surface mining, are totally unsuited to any part of the Eastern Slopes.

In the opinion of the Society, there are three topics for consideration:

1. Those areas and resources which should be preserved and protected,
2. Those uses which should be controlled, and
3. Those activities which should be prohibited.

Those areas and resources we would preserve and protect are:

- a) the watershed
- b) the flora and wildlife
- c) wilderness and natural areas
- d) archaeological and historical sites.

Those areas upon which we would place controls are:

- a) roads
- b) grazing
- c) forest industry
- d) the oil and gas industry
- e) urbanism
- f) recreational areas
- g) educational, institutional and research projects.

The activity which we would prohibit is surface mining.

#### DISCUSSION

1. a) Watersheds: Of prime concern to all is the protection of our water resource, the value of which cannot be overemphasized. Therefore, every effort must be made to retain the water-retaining capabilities of the Eastern Slopes. Many activities in the past, such as timber cutting and oil and gas exploration, have had destructive effects on the forest lands, resulting directly or indirectly in erosion and siltation; some activities, such as surface mining, continue to do so.

b) Flora and Wildlife: The flora and wildlife of the Eastern Slopes are bountiful and unless great care is taken many species will disappear. Vegetation varies according to altitude and soil, and ranges from aspen parkland and grasslands at the lower elevations, through forest lands

with Douglas fir and various pines, spruces and poplars, to the tundra above timberline. Hundreds of kinds of wildflowers are found, different species under different conditions, some quite rare, and some found nowhere else. Wildlife is plentiful and varied - from big game animals down to the smallest mouse. The number and conditions of winter ranges are crucial to the survival of wilderness populations. In the rivers and lakes fish could abound while in the forests multitudes of birds find sanctuary.

c) Wilderness and Natural Areas: The Society strongly advocates the establishment of natural areas in the Eastern Slopes, for the protection and preservation of the flora, fauna and natural features found there. Such areas must be large enough to provide a feeling of wilderness, a feeling which cannot be maintained in the face of overuse. They should be without roads, urban, commercial or industrial development, and with all forms of mechanized equipment excluded. The Society therefore endorses the proposal of the Alberta Wilderness Association to establish the Elbow-Sheep Wilderness. Within such areas, trails should be developed and/or maintained for hiking and back-packing, with any roads currently existing reverting to foot use, or being used as fire access roads. Overnight camping and the lighting of fires should be regulated by permit. All wildlife, plants, trees, rocks

and fossils should be left undisturbed (as is the law in the National Parks), with permits being required by those persons interested in collecting specimens in the interest of serious study or research.

The Society is especially concerned about damage to fragile areas at elevations upwards from about 6000 ft., where the topsoil is only 1 - 2 inches deep. Scarred alpine meadows, composed of grasses, sedges, heather, moss and herbs, may take centuries to recover from damage caused by overuse. Cutting virgin forest at such elevations is also ecologically irrevocable. The existence of many forms of wildlife depends on large tracts of wilderness. Man, too, needs wilderness.

The need for wild or natural places in which to wander, to explore, to observe wildlife, and to give a feeling of freedom is inherent in most of us. Such places are long since lost to great numbers of people on this earth.

A fragile equilibrium prevails in the wilderness - plants and animals live within its natural balance, and man too can live within that equilibrium. If man decides to tame a wilderness, he can - or he can preserve it for what it is. This is the choice that we are now called upon to make. David Brouwer of the Sierra Club has expressed it this way: "There is no substitute for wilderness. What we now have is all we shall ever have."

d) Archaeological and Historical Sites: The whole area of the Eastern Slopes has a colorful early history from the days of the fur trade, through the rush of settlement, to the present day. It also has a rich pre-history.

Subsequent to the 1972 Public Hearings held by the Environmental Conservation Authority, the Alberta Heritage Act was approved by the Legislature in May of this year. It became evident at the hearings that the public is concerned that future programs of land usage should protect, preserve and restore, where possible, the heritage of Albertans. Any sites of historical or archaeological significance should be protected from commercial or industrial development and from vandalism. Trails which figures in the early history of Alberta, from Indian days, should be maintained for use by hikers. Several Indian rock paintings, encampments and meeting places are known to exist. These should be fully researched and protected. The Society would condemn any commercial exploitation of such sites. The Eastern Slopes may well contain a wealth of records which could be lost permanently if there is not wise control of man's activities.

2. From the foregoing discussion, it is obvious that activities or developments permitted in the Eastern Slopes



should be subject to controls.

a) Roads: One of the serious effects of exploration into timber, mineral, coal, oil or gas potential and their subsequent development is the roads which are bulldozed into an area. They scar up the landscape in the area of exploration, several roads often being routed before a final one is chosen. These contribute greatly to erosion and reduce the quality of the water in the watersheds. They interfere with wildlife - grazing space is diminished, resulting in a reduction in the size of herds. They give greater access to the general public to the back country, and this intrusion drives the wildlife further from its natural habitat. They invite the public, with various motor vehicles, to intrude into sometimes delicate country, with the result that it may be years, if ever, before the area can be returned to a natural state. Before roads are cut for exploration or development purposes, adequate surveys should ensure against trial and error routing. Temporary access roads, once abandoned, should be reforested to prevent erosion.

Existing permanent roads in the Eastern Slopes should be maintained and even upgraded to provide access to, but not through, natural or wilderness areas, to facilitate management and control of fire, recreation, wilderness, and tourism.

The present design standards for highways in the Forest Reserve, as exemplified by the proposed Kananaskis Highway, are without justification. Preservation of the Eastern Slopes as a protected watershed, a recreation area, and as a wilderness conflicts with the proposed wide speedway. The Kananaskis Road should be a scenic route to be travelled at a pace which encourages the enjoyment of, and participation in, its many natural attractions. It should not be a transportation corridor for tourists or for industry. Paving of the existing road, along with the elimination of dangerous curves, would be adequate and more desirable. In this we wish to emphasize our support of the very reasonable bid of the Kananaskis Action Group for a 50 M.P.H. design road.

b) Grazing: It appears that domestic grazing in most regions outside of wilderness areas is generally acceptable, provided that appropriate regulations are established and supervision is maintained to prevent overgrazing. Where competition for grazing creates conflict it should always be resolved in favour of wildlife. Ecologically delicate areas cannot support any grazing. Domestic stock should be excluded from those intensively used recreation areas.

c) The Forest Industry: Within the forests, the forest industry is an appropriate activity. It is also

compatible with most potential uses except the preservation of wilderness areas. Under the present forest management system implemented in 1966, the timber industry has demonstrated the advantages of an efficient, long range, closely controlled operation. The system accomplishes full utilization of the timber in all parts of Alberta without over-utilization. The operators are required to follow procedures (e.g. reforestation) that ensure long term productivity. In short, the forest is maintained at all times and, as such, its value to the watershed is retained. The operation of mills, and in particular pulp mills, must be subject to strict regulations designed to prevent air and water pollution, and abandoned mill sites should be returned to the natural state.

d) The Oil and Gas Industry: The forest was not always so well managed. The oil and gas industry has, over the past 50 years, played its part in destroying valuable forest lands. Exploration has resulted in the construction of primitive roads and seismic trails over the entire forested area. In so doing, strips of forest were removed and the timber wasted. In fact, until recently, more timber was destroyed in oil and gas exploration than was harvested by the forest industry. Such thoughtless mismanagement of the

natural resources must not be repeated. With proper planning, and cooperation, the oil and gas industry and the forest industry might have worked together to mutually acceptable and less destructive ends. Also, such stripping has often resulted in the disturbance or rerouting of watercourses, soil erosion and siltation.

The whole picture of oil and gas exploration and development in the front ranges of the Eastern Slopes is a complicated one. The fact that no area has escaped exploration thus far, is not to say there will be no more exploration, for as demands for oil and gas increase the area will be rechecked, and currently uneconomic fields will be developed. With development will come pipelines, pumping stations and processing plants which require more clearing of forest, and possible pollution of the land, water and atmosphere from spills, leaks, and noxious gases.

The Society firmly recommends that further exploration for oil and gas cease until less destructive methods have been developed, and that any further development by the industry be subject to serious study of its effects on the environment.

e) Urbanism: Urbanism has not, so far, presented much of a conflict within the area of the Eastern Slopes because of the small number of communities. However,

the character of those communities would have been greatly enhanced had they been developed in a manner akin to alpine communities in Europe which appear to co-exist naturally rather than to have been transplanted from a more urban setting, their architectural style also suiting their location.

In view of the ever increasing exodus of families to permanent or summer homes in a rural or country setting, and of the first-class highway which can provide speedy commuting to city occupations, the Society's concern is that urban sprawl does not become a feature of the mountain slopes, valleys and foothills.

f) Recreation : A discussion of the recreational potential in the Eastern Slopes is of great importance. The unsurpassed scenery, the purity of the air and water, the scent of woodland, the abundance of wildlife, the myriads of wild flowers, the silence - all contribute to quality recreational environment for both intensive and wilderness use. With wisely planned, efficiently supervised development and preservation, the Eastern Slopes can be safeguarded for future generations. It belongs to our cultural life.

Increasing population, leisure time and affluence, will increase demands for recreation areas and facilities. Potential demand for outdoor recreation

in Alberta during the mid-1980's indicates the outdoor recreationists will more than double, the total number of recreation days will more than triple, and the total recreation expenditures will almost quadruple. A typical summer day might see an average of 400,000 persons participating in outdoor recreational activities in the Forest Lands of Alberta. If such figures indicate the trend for the province as a whole, consider the situation in the Bow River drainage basin with its close proximity to the large and growing city of Calgary.

The needs for recreation are varied and include natural or wilderness areas, simple, scattered facilities for camping, picnicking, fishing and hunting, etc., and concentrated facilities for intensive use and tourist accommodation. The first need has already been discussed.

The existing overtaxed camping and picnicking facilities in the forest reserve should be augmented by the addition of many more placed at carefully researched locations along the length of the forestry roads. They should be kept small in size and with minimal disturbance to the areas in which they are located. It is strongly recommended that tent campers and motor home/trailer campers be given separate campgrounds, or at least segregated areas in one campground.

To prevent overcrowding, each campground should have

a fixed number of sites and beyond this capacity no one else should be allowed in. Camp guardians collecting camping fees would control the occupancy level, and ensure proper maintenance, lacking at the present time. The campgrounds along #1 Highway between the Stony Indian Reserve and Banff Park are glaring examples of overcrowding.

For the growing number of canoe and kayak enthusiasts, simple riverside campgrounds should be established along the Bow River, with no road access.

Intensive recreational use of any part of the Eastern Slopes requires careful thought, and should be restricted to areas adjacent to major highways and those where ecological disturbance will be at a minimum. It is strongly recommended that facilities along the forestry roads be camping oriented with no additions to the present commercial developments.

The increasingly critical problem of accommodation saturation at motels and campgrounds both inside and adjacent to Banff Park, coupled with the recent government limitations placed on commercial development in the parks, demands additional facilities close to the prime focus of tourist attention, Banff Park. Canmore's declining prosperity, together with its proximity to the Park and to the Trans-Canada Highway,



render controlled commercial development of the Canmore corridor a favorable solution to the problem.

Siting and design of such commercial developments should harmonize with their surroundings, and be aesthetically pleasing. Buildings should present an uncluttered aspect or low rather than high profile, and be shielded, as much as possible from the view of highway, eliminating the "strip" effect which might otherwise result.

g) Educational, Institutional and Research Use:

The forests provide excellent surroundings for Guide, Scout, Church and other youth camps, educational and research centres. Facilities required by these camps and centres are not usually extensive and should offer no conflict to the ecology if carefully sited and planned. The benefits derived from camping experiences, educational programs and research studies should far outweigh any negative aspects. Similarly, inexpensive accommodation at youth hostels established throughout the forest reserve provide youth with the opportunity to hike and explore over a large area.

3. With the protection of the watersheds of the Eastern Slopes foremost in our minds, we must deplore activities which are destructive. Any operation, such

as surface mining, which strips all vegetation from any part of this area must be considered damaging. When "reclaimed", by which the mining industry means grassing over, an area is by no means restored to its original state. However, this is what is necessary for the preservation of a quality watershed. Winter snows are retained much longer in a mature forest than on open grassland and spring run-off is significantly moderated by the presence of the forest. As a consequence, spring flooding of downstream areas is prevented and, much more important to the agricultural industry, the run-off occurs later in the year when the water is required. The forest serves the same function following summer rains.

Surface mining also conflicts with the recreational value of the area. Such value must be measured, not only in terms of financial returns to recreational operations, but also in terms of the greater quality of life enjoyed by the people of Alberta. For future generations to enjoy the same pleasures, then we must restrict development to those operations which do not destroy its wilderness qualities. Open areas are abundant on the prairies; a premium must therefore be placed on our remaining forests. The 1600-acre plots of grass that the mining industry states it will give us

in return for our forest are not needed. In fact, their presence would significantly detract from its recreational value.

The coal industry continues to remind us of the jobs and the money lost if surface mining is prohibited. Although no one, including the mining industry, has conducted a thorough economic study, the Society submits that tastefully developed recreational operations would more than offset any loss suffered from the absence of strip mining. More important, recreational activities would provide a permanent source of financial benefit whereas mining is temporary.

Albertans have been threatened with a rise in the cost of power if mining operations are limited. However, the coal used in the power industry is mined on the plains, not in the mountains and foothills, from where it is all exported.

The Society feels strongly that surface mining is not compatible with other more important uses of the Eastern Slopes, and submits that, even considered solely from an economic point of view, coal mining cannot compete with other less destructive uses of the area.

#### SUMMARY:

In summary, and in keeping with the Purpose of the

Forest Reserves, the Calgary Field Naturalists Society re-emphasizes the importance of the Eastern Slopes as a watershed which must be protected at all costs.

The Society suggests that government investment in the tourist industry, the current #3 source of income, would reap greater and more continuing financial returns to the province, with less ecological sacrifice, than would occur should the resources extraction industries be encouraged to operate in the Forest Reserves.

In conclusion, the Society asks that whatever land use and resource development in the Eastern Slopes follows these public hearings, they be preceded by much thought and thorough research. The following quotation is apt: "Change is inevitable and in the face of change let us have the wisdom, the understanding and the patience to preserve and to enhance that heritage which, if destroyed, will leave us and our children the poorer by its passing."

## QUESTIONING BY THE AUTHORITY

MR. DOWLING:

Your society has come down quite heavily on surface coal mining. Do you think the majority of Albertans are prepared to forego the revenue accruing from such industry?

MR. PRICE:

Yes, I do think that. The society does feel that the loss is certainly quite acceptable to most Albertans when they realize what can be gained by losing the industry in the eastern slopes.

MR. DOWLING:

You've quoted some general figures with respect to the number of outdoor recreationists and the total number of recreation days in the foreseeable future. They are very interesting. Would you give us the source of those figures?

MR. PRICE:

I believe they came from a publication of the Canadian Forestry Association and they seemed to be the result of some considerable research. I can get you the specific reference.

DR. TROST:

We would be very pleased to have it.



BRIEF TO  
ENVIRONMENT CONSERVATION AUTHORITY  
HEARINGS  
ON  
LAND USE AND RESOURCE DEVELOPMENT  
IN THE EASTERN SLOPES

Presented by:

D. Lousier  
Kananaskis Action Committee



## INTRODUCTION

When examining land use and resource development in a certain area, a primary land use consideration is transportation facilities. In most areas, human emphasis on speed and convenience has dictated that these facilities be roads and highways. In developing roads and highways into unsettled areas, it is necessary that route alignments be sensitive to environmental constraints. To develop or improve roads into recreation areas requires that such roads be constructed to assure that the best use is made of the beauty of the environment and the landscape, to minimize detrimental environmental impacts, and to encourage the motorist to relate to his surroundings. If reference is made to the conclusions of Phase I of the Foothills Resource Allocation Study (Kananaskis-Spray Drainage District) which rank watershed resource, ungulate range and recreation resource as the three most significant management considerations, it is obvious that the 70 mph design standard proposed for secondday highway 940 (Kananaskis Forestry Trunk Road) is totally unreasonable and that it is in direct conflict with the purposes of preservation and enjoyment of the forementioned resources. The construction of a highway to a 70 mph design standard (RAU-70-236) would seem to be more in terms of developing a high speed transportation route than establishing a scenic corridor that does not interfere with the watershed and ungulate range resources and that is suited to the needs of the recreational public.

## HIGHWAY IMPACT

The RAU-70-236 design standard highway being constructed now in the Kananaskis Valley, without adequate and responsible environmental research having been done, is a hazardous development when considering the land use priorities for the Kananaskis area outlined by the Department of Lands and Forests. The watershed resource, ungulate range and recreation resource all are endangered by the ramifications of the new highway development.

Water is the primary resource of the Kananaskis-Spray Drainage District. Only about 12% of the Saskatchewan basin lies in the mountains but about 90% of the total annual flow comes from the Western Slopes and the National Parks. The management of this region for an optimum water supply in terms of water quality, quantity and regime is essential. Consequently, there must be controlled development, or no development, of the other resources to ensure the preservation of the water resource.

A real hazard to water quality is road development, and the establishment of a paved highway at a 70 mph design speed through this area poses an ominous threat (Adams, 1972). A road design that cuts through or levels hills, that requires deep and extensive cuts and fills in a windy mountainous area of poor soils and slow regenerative capabilities, will interfere with the drainage regime as well as water quality and quantity. An all-weather, multi-purpose transportation facility through a mountainous area will require considerable effort and expense to be kept open and safe. A normal highway maintenance practice is a liberal use of de-icing salts to clean snow from roadways. The two commonest salts, sodium chloride and calcium chloride, and their constituent elements occur quite commonly in nature and in their natural amounts present no threat to the environment. The danger is that high concentrations of these substances upset natural balances and overload dispersal mechanisms. An associated problem of using de-icing salts arises, from the use of several chemicals added to salt to facilitate storage (eg., ferric ferrocyanide and sodium ferrocyanide) and to inhibit corrosion of automobiles (eg., sodium hexametaphosphate and chromate salts). These compounds have severe latent toxic properties and other potential side effects.

Twenty-five to 50% of the salt used on roads enters the groundwater and similar amounts enter the surface watercourses (McConnell and Lewis, 1972). The snowmelt may contain a number of pollutants in addition to de-icing salts and their additives, e.g. quantities of vehicular deposits (lead, cadmium and petroleum compounds) or vehicular

air pollutants (nitrogen oxides, sulfur dioxide, and particulates). The previously mentioned pollutants in a watershed can constitute a serious health threat to local consumers (fauna, flora and recreationists) and downstream consumers, can cause structural damage to soils and vegetation, and can interfere with normal water stratification in lakes and rivers (McConnell and Lewis, 1972).

A high design standard highway is necessarily an inflexible design standard requiring major alterations in the topography and terrain. Such major alterations interfere with drainage regimes above and below the roadbed, reduce necessary buffer zones between the highway and water bodies and will increase sedimentation in the waterways until revegetation takes place. The Kananaskis Valley is a small area and provides only a portion of the watershed resource but the ramifications of this highway, as a model project, throughout the entire foothills does not augur well for the preservation of Alberta's watershed resource.

Ungulate range is the second management priority in terms of abundance and quality. Many of the effects on the watershed resource of a major arterial highway in a narrow mountain valley will press as well on the wildlife grazing areas. A major route (the Department of the Environment impact statement calls it a multiple purpose transportation corridor) interferes greatly with migration patterns and diurnal movements. The consensus among highways officials seems to be that the increased number of highway kills of wildlife will be offset by the effect on wildlife populations of the lush vegetation on the seeded shoulders. The vegetation, if it does take hold, will in reality be deadly when considering the pollutants (re: above) entering the roadside system (up to 400 feet on either side of the road right-of-way).

It is obvious that the highway being built is changing the character of the Kananaskis Valley and will in turn change recreation patterns and the quality of recreation experiences now enjoyed. The new highway is the focal point now of the whole valley and many of the

scenic vistas will be permeated by the sight, sound and smell of a transportation corridor. Because of the vehicular and highway noise and the enormity of the right-of-way clearing a recreationist will have considerable trouble getting away from the effects of the highway and finding the solitude he once easily could. The absence of a recreation plan for the Kananaskis Valley before constructing what the highways minister calls a 'recreation road' is deplorable.

When resources used for all roads constructed each year are added up, it is clear that highways consume a significant portion of our natural resources. Therefore, it appears reasonable to assess this consumption of resources and establish guidelines for proper use of these resources. A forward step in this direction is the requirement of an environmental impact assessment before the actual fact of resource consumption. An environmental impact statement should inventory and evaluate (1) the environmental impacts of the proposed action, (2) any adverse environmental effects which cannot be avoided should the proposal be implemented, (3) alternatives to the proposed action, (4) the relationship between local, short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and (5) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented (NEPA, 1970). The Alberta Department of the Environment environmental impact statement has done nothing toward incorporating environmental concern into the highway planning process. The main inadequacy of the statement is that few data, if any, were collected at the local level concerning the environmental, social and economic aspects of the proposal. The impact statement contains arguments rather than findings, opinions rather than studies, and generalities rather than facts. The influence of the statement was to preclude further research and end inquiry by "rubber-stamping" the notion that a safer, more efficient highway facility has a positive effect on the environment. The department's impact statement appears as an additional bureaucratic procedure involved in environmental considerations in future highway developments in the Eastern Slopes.

1. The attainment of all project objectives.

No consideration was given to modifying, changing or deleting any of the objectives. No field assessment of the impact of the topographical alterations needed to achieve all objectives was made.

2. Improve highway safety and traffic flow characteristics.

This fosters the age-old idea that a bigger highway is a safer highway. How can a 70 mph design standard with a posted speed limit of 50 mph be considered a safer highway? The highway will experience a considerable amount of stop-and-go traffic, and with a design that will permit "safe" driving at 70 mph, there can be no semblance of a safer highway. Given the present use of the Kananaskis Road in terms of vehicle numbers, the new highway may improve traffic flow characteristics. But it is a well-known fact that new highways generate new traffic that travels longer distances and more often. It is questionable whether a high design speed facility can improve driving quality given greater use and greater stop-and-go traffic.

3. Improved view from the road.

Traffic travelling on the new road will see farther along the road and farther away from the road. However, the straight, flat highway has removed many of the vistas once available to the motorist. The motorist now will find it almost impossible to relate to his surroundings from his lofty and sensually cold position on the highway.

4. Increase of recreational opportunities for more people.

The only increased recreational opportunities, evident from the recreational planning done, will be for the motorist who is reluctant to remove himself from his car. The quality of recreation now enjoyed in the Kananaskis Valley, by snowmobilers as well as backpackers, will disappear. The new highway will not encourage the motorist to get out and relate to the environment through other forms of recreation.

5. Improvement of snow clearance characteristics to facilitate winter transportation.

Wide rights-of-way act as wind tunnels in mountainous areas. The Kananaskis Valley has high winds throughout the winter and these winds will drift in any snow storage areas along the road no matter how deep these areas are. Once this happens, improved snow clearance characteristics no longer exist. Winter maintenance costs will be very high because of drifting problems. A small chunk of snow on the road way can be an impassable drift in only a few hours. Perhaps the real positive impact will be in the motivation of government departments responsible for maintenance to keep the road serviced.

Contrary to the opinions expressed in the impact statement the present Kananaskis Road has denied the privilege of access for recreation to no one with some personal transportation and resources. With some minor construction and improvements and proper seasonal maintenance the present road could adequately service the recreation capacity of the Kananaskis Valley. The new road will have the same limitations as the old road: those without personal transportation are denied access. The poor, the aged, the disadvantaged do not have improved access because of a new highway.

The Kananaskis Action Committee claims no expertise in environmental impact assessment, highways engineering, recreation planning and sociological and economic evaluations but we have talked to people who have. Our expertise lies in our concern for the environment. This concern, augmented to a large extent by the opinions of the professionals we have talked to, has led us to the following conclusion: Despite being inexperienced in environmental impact assessment, the Department of the Environment could have, with common sense, honest concern and judgment, and reasonable effort produced a proper impact statement.



Such a statement would have placed the environmental problems in perspective with the size and scope of the highways project and could have encouraged the formulation of a viable planning process for highways in the Eastern Slopes.

## RECREATION

The Kananaskis Action Committee, along with almost every recreation-oriented group in Calgary, has continually deplored the lack of recreation planning (including the absence of guidelines for discussion of recreation zoning, recreation potentials, recreation demands) for the Kananaskis Valley in particular and the Eastern Slopes in general. The only visible concern expressed for recreation was that proposals for commercial recreation developments be given every opportunity to meet continually extended deadlines for submission.

It seems reasonable to have a recreation plan for small areas into which a large 'recreation road' is being built before the road is built. This recreation plan must be an integral part of an overall development and management plan for the larger region as a whole. On March 26, 1973, the chief highways engineer was quoted in the Calgary Herald as follows: "...positive plans for expansion or extension of camping areas have not been made simply because no one as yet knows precisely how many people will use such facilities. We can't project the number of people who will be coming in, and until we have a good idea as to numbers it wouldn't make sense to commit ourselves to plans at this time." It is an interesting quote because projections of future use of the highway have been used as justification for building the RAU-70-236 standard. The particular specifications of this design permit a given capacity in terms of vehicles per unit time. Yet when one examines this highway project beyond the realm of the highway engineers, evidence of further government involvement and planning is blatantly absent.



May we submit that before the building of a 'recreation road' that will increase the number of people entering an area, some idea of the recreation potential and carrying capacity of the land should be obtained. Anyone who has visited the Kananaskis area can understand that it is not a very large area and could not handle unlimited numbers of people. But the government is building a multiple purpose transportation facility (that can provide unlimited use) without giving any indication to increase campground space, day rest areas, trails for hikers, skiers, snowshoers, snowmobilers, motor bikers, or other recreation facilities that could have been considered in an original inventory of recreation potential. No mention has been given to improving and increasing sanitation and garbage collection and removal facilities. The government record in the Kananaskis Valley with regard to garbage removal is already bad enough. The suggestions that we have made obviously pertain to the environmental well-being of the Kananaskis Valley and the recreationists who (will) use it and should have been an integral part of the government planning process. The primary considerations in the government's ideas in creating a tourist haven in the Eastern Slopes should be concern for the environment and the Albertans who are charged with the responsibility of living in and maintaining this environment, and not how much money can be extracted from the pockets of out-of-province tourists.

Despite the statements of the chief highways engineer, there are ways to predict recreation demands on an area which has had a proper assessment of recreation potential and carrying capacity (see Kates, Peat, Marwick and Co., 1970, and Appendix I). Because the Eastern Slopes are our greatest natural resource, the province of Alberta can realize a greater economic return by developing recreation facilities (public, non-commercial as well as some private, commercial) in a rational, well-planned manner. Therefore, the Kananaskis Action Committee suggests that government planners do their homework and make themselves and their departments aware of the motivating list of literature that has been produced on recreation planning.

## CONCLUSION

In conclusion, the following points are felt to be relevant to proper land use planning:

1. The primary considerations have to be environmental conservation and human survival and sanity, not economics and selfishness. It should be the concern of government planners and citizens of Alberta alike to

"encourage and foster in every way possible a whole new ethic ~~and~~ philosophy towards resource use by the public, aiming more at individual self-responsibility and service to the society and less at the Benthamist philosophy of personal gratification and selfishness at others' expense. Such a change in philosophy should invalidate many of the trends and projections of forest recreation use that now threaten to destroy the quality that makes it valuable." (Graves, 1972).

We must leave behind the pioneering philosophy, so aptly illustrated by the Department of Highways and Transport in the matters of the Kananaskis Highway, a philosophy that has done much to level the land and to misplace native peoples, fauna and flora in the world.

The new highway will isolate the motorist from the environment and will not permit him to relate to his surroundings. The highway will be an ever-present source of noise and disturbance that cannot be avoided at any point in the Kananaskis Valley, unless one could traverse the height of the land on either side of the Valley.

2. Instead of using inflexible transportation corridor design standards to build recreation roads, information regarding recreation potential and land carrying capacity should be used to design a road sensitive to topographical constraints and compatible with the environment and recreation potential of the area. The new highway as designed does not recognize ecologically-sensitive areas and will overload the carrying capacity of the Kananaskis Valley. This recreation planning

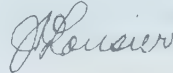
must of course take into consideration the importance of the area in terms of other resources (e.g., watershed and ungulate range in the Kananaskis Valley).

3. The Kananaskis Action Committee would like to petition the Environment Conservation Authority to move for greater legislative protection for the environment and for stricter regulations to ensure adequate and responsible environmental impact assessment.

We of the Kananaskis Action Committee appreciate the opportunity to submit our views to the Environment Conservation Authority and we hope the hearings will be successful.

We have tried to be responsible in encouraging everyone to whom we have talked to make their opinions concerning the Kananaskis Highway and land use in the Eastern Slopes known to you through the hearings.

Thank you.

A handwritten signature in dark ink, appearing to read "J.D. Lousier". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

J.D. Lousier, Co-Chairman,  
KANANASKIS ACTION COMMITTEE,  
3209 5th St. N.W.,  
Calgary, Alberta T2M 3E1

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APPENDICES

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Mr. Lousier supplemented the Kananaskis Action Committee's submission with two appendices:

Appendix I: A report outlining the scope of work that has been conducted under Phase One of a two-phase contract entitled "Prototype Models Analysis" and dated June 9, 1969.

Appendix II: Recreation Resource Management: a consideration of a management system based on user concepts and perceptions by J. D. Lousier and L. V. Butler.

These reports are available in the Information Center, Environment Conservation Authority, 9912 - 107 Street, Edmonton, Alberta.

## QUESTIONING BY THE AUTHORITY

MR. KINISKY:

Could you expand on some of the elk migrations which take place across the current Kananaskis Highway and on what animal numbers are involved.

MR. LOUSIER:

We don't know the numbers as these matters have not been studied. The Department of Highways has indicated that a study has been made but we were not given the data. As far as we are concerned, we are simply basing this supposition that highways can interfere with migrations and diurnal movements on the expertise of wildlife management people to whom we have talked.

MR. KINISKY:

Have you requested the Department of Highways and Transport to provide you with information on the environmental impact they feel they may have in constructing the road?

MR. LOUSIER:

We've asked for the information accumulated through their ecological research, but we have not received this information. We have made specific criticisms and comments and have been told that these have already been incorporated into the road plan. This is all the feedback we're getting.

MR. KINISKY:

Do you feel that you might be more satisfied had the Department of Highways provided you with detailed information convincing you that they could support their position?

MR. LOUSIER:

Do you mean, would I feel less violently about the project if this had been done?

MR. KINISKY:

Yes.

MR. LOUSIER:

I don't think so. I still think the basic premise is wrong that a 70 mile an hour design standard is needed to service the valley as far as recreation is concerned. If we look at this design standard as a transportation corridor standard that can serve as a trunk route from perhaps Grande Prairie to the American border, then I think consideration must be given to replacing the route from, say, Seebe to Coleman with Highway No. 2. It's already there and it can serve the same purpose. But if we have a recreation oriented road into the Kananaskis and areas south, I think this can serve the purpose very well.

MR. KINISKY:

Other than the speeds on the highway, do you have any information concerning the load limits they are going to allow?

MR. LOUSIER:

Load limits were going to be imposed, but these have been removed. Mr. Cal Lee brought a motion in the Legislature calling for load and speed limits and the motion was amended by the MLA from the Pincher Creek area, Charlie Drain, to remove the load limits and simply have a 50 mile an hour speed limit. But if we have a speed limit of 50 miles an hour on a road that can be driven safely at 70, and if we have increased recreational use, we have increased amounts of stop-and-go traffic. So if you're stopping and going and worrying about the people who are speeding, we don't think this highway is going to be a safer highway.

DR. TROST:

I was particularly struck with the comments in your submission on the environmental impact statement, and your criticism of its use in this particular instance. Have you suggestions as to how environmental impact statements might be better used for the purpose that I'm sure we both agree they can achieve?

MR. LOUSIER:

The first step in better use of environmental impact statements is to produce them before a particular project is started. Granted, we don't know the full impact of any development until the development is there and is being used. But we have had experiences in the past with similar types of developments so that one can say, all right, here is a development in a particular mountain area that caused this amount of damage. Maybe we can apply the same principles that pertain to this example to our particular situation.

I think an environmental impact assessment really doesn't tell us much unless we have some idea of the resource that's there, whether it's recreational, mineral or whatever. As long as we have that inventory we can say that given a certain amount of use, there is going to be this impact. Unfortunately this has not been done.

I think one of the sections I omitted, giving the purposes of an impact statement, would answer that question for you.

There are just five short points:

An environmental impact statement should inventory and evaluate:

- (1) The environmental impacts of the proposed action;
- (2) Any adverse environmental effects, which cannot be avoided should the proposal be implemented;
- (3) Alternatives to the proposed action;
- (4) The relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity; and
- (5) Any irreversible and irretrievable commitments of resources, which would be involved in the proposed action, should it be implemented.

Some of my conclusions were not included in the copy submitted to the Authority, also some references were not listed. These will be mailed to the Authority.



Presented By: F.L. Scott

LAND USE AND RESOURCE DEVELOPMENT IN THE EASTERN SLOPES

PUBLIC HEARINGS

SUBMISSION OF THE CALGARY CHAMBER OF COMMERCE

1. The Calgary Chamber of Commerce recognizes that it is essential to the continued financial well being of this Province that resource exploration and development be encouraged and continued.
2. This Chamber also recognizes that the quality of human life is an asset now possessed by this Province but which in terms of natural surface resources could be eroded without a sound maintenance and preservation policy.
3. This Chamber also recognizes that the Eastern Slopes of the Canadian Rockies offer the best recreation areas overall in the Province.
4. This Chamber further recognizes that conservation areas throughout the Province are of considerable importance in the continuance of present ecological systems.
5. This Chamber further suggests that the present Provincial Parks system is in error in that it fails to differentiate between areas committed to recreation of people and areas committed to the dedication of lands for wilderness or natural conservation.
6. This Chamber further submits that it is not too late for a comprehensive and cohesive recreation and wilderness plan to be established as the policy of this Province but that at the rate of expansion of the population of cities, another 5 years without such a policy could result in irrecoverable losses in natural areas which need not occur.

Therefore, this Chamber of Commerce now recommends to the Government of the Province of Alberta that:

1. A comprehensive evaluation of all of the public lands in the Province of Alberta now be made for the purpose of assessing:
  - (a) Their economic and/or extractive value;
  - (b) Their value in a wilderness preservation and ecologically significant sense;
  - (c) Their recreational and public oriented use value;
  - (d) Their value in support of any and all of the foregoing.
2. Inasmuch as development v. conservation pressures appear to be the most pointed in the Eastern Slopes of the Canadian Rockies, such evaluations first be conducted therein and completed and that thereafter the balance of the Province be systematically examined and evaluated and that public hearings be held in each general area designated from time to time for such attentions.
3. A decision be reached as soon as practicable following the delivery of such evaluations as to how much wilderness lands and recreational lands are reasonably foreseeable as a definite requirement for the citizens of this Province within the next 100 years and that such decision then be applied to the results of the evaluations in order that lands most qualifying may be then permanently dedicated either to wilderness use or to public recreation use.



4. The Alberta Chamber of Commerce policy as appended hereto as Appendix "A" be adopted where applicable to all lands designated as aforesaid for wilderness conservation or public recreation purposes.
5. All lands not so designated be then available for extractive or other economic purposes within the restrictions of the general guidelines as now established in the Environment Conservation Act and other applicable legislation.

May 16, 1973.

## ALBERTA CHAMBER OF COMMERCE POLICY

## NATIONAL PARKS

The general purpose of the National Parks of Canada is now founded on the premise that the National Parks be public possessions as cited in the National Parks Act, 1930, which reads as follows:

"The Parks are hereby dedicated to the people of Canada for their benefit, education, and enjoyment, subject to the provisions of this Act and the regulations, and such Parks shall be maintained and made use of so as to leave them unimpaired for the enjoyment of future generations." (Chapter 33, Section 4)

However, the original intent for the establishment of Parks was not related to the unimpairment principle of the foregoing but rather to the development of health spas and other recreational areas. Thus, in certain National Parks the recreational purpose has become so firmly entrenched as to derogate completely and almost irrevocably from the wilderness philosophy of the present Statute. Experience in such Parks has shown that the demands of conservationists, recreationalists, and persons engaged in research are not compatible within the same geographical areas and therefore multiple use leads to confusion in interpretation of policy.

Experience has also shown that the word "Park" is capable of several different and conflicting connotations. In order to face the challenge of the varying interpretations placed on this word, a new and descriptive nomenclature must now emerge. By doing so, the policy for those areas now known as "National Parks" may properly take into account the varying needs and interests of foreign visitors, the Canadian people and the full potential of these dedicated areas.

It also seems clear that the Canadian policy for its dedicated lands will be considerably enhanced by the addition of further suitable areas into its National system in which a phase or phases of biological, zoological or anthropological ecology may be preserved from extinction or from such modification as to cause such affected ecologies to fade into insignificance in our National heritage.

## RECOMMENDATIONS:

To the Federal Government that:

1. To avoid confusion, the major part of the existing national parks which are presently in a wilderness state be established as National Wilderness parks and preserved as wilderness without development of any kind taking place therein.
2. The boundaries of the National Wilderness Parks be established by legislation and that the permitted uses in these parks be limited to those activities appropriate to the enjoyment of the wilderness, such as walking, horseback riding, canoeing, cross country skiing, climbing, hiking and other similar activities which would not detract from the natural state of these parks.

3. Additional National Wilderness Parks be established as soon as possible, the boundaries to be fixed by legislation, while wilderness areas are still available.

4. Suitable administrative facilities and areas necessary for the provision of services in the National Wilderness Parks be established outside the area of such Parks or if established within such Parks, the limits thereof be established by legislation.

5. No commercial, industrial, extractive, developmental or other similar use, i.e. mining, lumbering, pipelines, be permitted in National Wilderness Parks, it being the unanimous view of the Chamber that the National Wilderness Park is an extremely important and vital resource which must be retained for future generations of Canadians to enjoy.

6. Areas in the existing National Parks which can no longer be considered wilderness and are presently and properly used or should be used for recreational purposes be removed from the National Wilderness Parks and established as recreational areas to be administered either as National Recreation Areas under Federal jurisdiction, or as Provincial Recreation Areas under Provincial jurisdiction, or under a combination of Federal and Provincial control, subject to conditions limiting their use to recreation and outdoor activities with adequate consideration for aesthetic and ecological requirements of the area; provided, however, that if National Recreation Areas be deemed advisable, they be administered by a department of the Federal Government other than that which is responsible for the administration of National Wilderness Parks.

7. The uses permitted in National Recreation areas be those activities which are normally found in tourist recreation areas in North America but that such activities be carried out in a manner consistent with aesthetic and good planning considerations.

8. No industrial, extractive, developmental or other similar use, i.e. mining, lumbering, pipelines, be permitted in such recreation areas, as such recreation areas are an extremely important and vital resource which must be retained for future generations of Canadians to enjoy.

9. The restrictions on land tenure at present in force in the National Parks be modified in the recreation areas to encourage proper provision of facilities by the private sector subject to adequate planning control and standards of maintenance.

10. National Wildlife areas, National Nature Preserves, National Seashores, National Wild Rivers, and National Historic Sites be established pursuant to suitable legislation, as these areas deserve protection from an ecological, aesthetic and historical point of view and will immediately benefit Canada as well as ensure the maintenance of the magnificent natural landscape of Canada for the benefit of future generations.

11. Consideration be given to the establishment of an independent commission or Crown Corporation to administer and control National Wilderness Parks, National Wilderness areas, National Preserves, National Seashores, National

Wild Rivers, and National Historic Sites, as it would draw together all the expert and trained people in this field and would allow for a more direct and immediate approach to the selection of, and acquisition of, the land necessary for these areas.

12. The National Parks Act be re-written as soon as possible under a suitable title to carry out the changes suggested herein and that a Canadian Wildlife Act be enacted to cover those matters relating to this field not easily covered in the National Parks Act, such as migratory birds, etc.

13. Because of the pressing importance of determining the requirements for outdoor recreational facilities in Canada a study be undertaken as soon as possible by a suitable Department of the Government.

14. It re-open negotiations with the various Provincial Governments in order to implement the foregoing recommendations.

15. Within the Province of Alberta, such recreation areas be established within the Bow River Corridor and the Yellowhead Corridor by removing from the present National Parks, in accordance with the foregoing recommendations the developed areas and adjacent areas which are now more suitable for recreation areas than for the maintenance of wilderness.

## QUESTIONING BY THE AUTHORITY

MR. DOWLING:

I was going to ask you what body should be carrying out this comprehensive evaluation, but you have answered that very nicely. I was going to remark to my colleagues that our work is cut out for us over the next five to ten years.

MR. SCOTT:

I sincerely hope so.

MR. DOWLING:

You refer in this particular case to a comprehensive evaluation of all public lands. What about private lands that are integrated within the eastern slopes?

MR. SCOTT:

I think in relation to private lands, we take the attitude that, as a Chamber of Commerce, we do not like the idea of confiscation for any reason. However, if the public good is shown as needing a particular section or group of sections in order to create an ecological unity, then possibly the public good must prevail over private interest. This is one of the areas in which we think this evaluation will have to make a positive input.

MR. DOWLING:

In the interim between now and a time when a comprehensive evaluation might be completed, would the Calgary Chamber of Commerce be in favour of other measures which might be necessary, and what form do you think those measures might take?

MR. SCOTT:

Yes, you are going to have to adopt some interim measures. For example, you may have to shoot from the hip in regard to a particular project in the Bow River corridor. I think you can rely on your own sort of smell of the situation, even at this point, to know that in the main Bow River corridor, astride these major transportation routes, your logical uses are tourism and industry where the industry now exists.

But in areas such as the Elbow-Sheep rise, it does seem to me that if there isn't a great deal of pressure, the policy, until you reach your evaluation, is to leave it alone. Don't touch it until it is clearly demonstrated that we must do something with it in the light of another requirement that may arise.

In short, gentlemen, I think you have to play it by ear until you can get your policy set.

MR. KINISKY:

Mr. Scott, are you aware of the work that is being done by the Foothills Resources Allocation Study group? It is doing a comprehensive survey that pretty well corresponds to your first recommendation.



MR. SCOTT:

I only became aware of its detailed recommendations today when I read the tables that were attached to one of the reports which has become available. Certainly I can see that a great deal of the evaluation we are seeking has already been done. The only thing the tables don't tell us is in what areas the designations are made, et cetera.

I presume the commission you have just referred to could also give overlay maps showing the areas they consider would be good for agriculture, et cetera. Somebody is going to have to make a decision as to how much land we want to maintain in a wilderness sense. Until that decision is made I don't think you can start pulling overlays.

MR. KINISKY:

I want to ask you for one more piece of guidance, Mr. Scott, because these problems are certainly going to face us very shortly. When we look, for example, at the overlays in the Foothills Resources Allocation Study report, which show us the distribution of pretty prime grazing land for animals, and find that this is almost totally superimposed by available coal, we are left with a decision to make as to whether we're going to have coal mining or whether we're going to knock off the animals. What sort of guidelines should we use when we make these decisions?

MR. SCOTT:

The biggest guideline is the guideline of need in the future. If you conclude, for example, that a certain area is better suited for coal mining than it is for grazing, then I think you have to make that judgment call. If, on the other hand, you conclude that grazing taken out of a certain area will have a very definite environmental impact upon, say, other forested areas around it, then you might have to turn right around and say, sorry but we're not going to allow the coal mining in that particular area. I think you have to make that decision; at least somebody has to.





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S U B M I S S I O N

of

THE ALBERTA DIVISION

of

CANADIAN PETROLEUM ASSOCIATION

to

THE ENVIRONMENT CONSERVATION AUTHORITY  
OF ALBERTA

on

LAND USE AND RESOURCE DEVELOPMENT IN THE EASTERN SLOPES

Presented By: D.F. McKinnon

JUNE 1973

INTRODUCTION

The Eastern Slopes, as defined by the Environmental Conservation Authority, comprises some twenty-seven million acres from which the Province gains multiple uses ranging from Wilderness Areas to commercial utilization through minerals extraction and agriculture. About twenty-one per cent of the area is designated as National and Provincial Parks and Wilderness Area. The area abounds in natural beauty, is interlaced with streams and rivers and offers great recreational worth to the people of Alberta. The area is rich in forests, minerals, oil and natural gas, water power and agriculture, the controlled development of which has contributed very significantly to the wealth and well-being of Albertans.

The Oil and Gas Industry is only a minor user of land surface in the Eastern Slopes area. We submit that exploration and production of oil and natural gas can be carried on compatibly with other uses of land in the area. Indeed development of these oil and gas resources will, in many instances, be complementary to other uses in the area by providing an improved economic base and improved accessibility for agriculture, tourism, recreation, forestry and forest fire control. These complementary benefits will develop within whatever resource management regulations are deemed appropriate by the Province.

The Industry's use of land, is unique in that it is only temporary, and is restricted to the land surface necessary to explore and develop valuable subsurface oil and gas resources. The Eastern Slopes is an area which has large potential for additional oil and gas reserves. To realize the benefits from this hydrocarbon energy potential, the interests of Albertans will be best served by government policies and regulations which are based on multiple and optimum use of natural resources and which safeguard the environment and ensure land used can revert back to other desired uses once the oil and gas reserves have been withdrawn from the subsurface.

#### MULTIPLE LAND USE CONCEPT

As outlined in the Information Bulletin for this Hearing, land in the Eastern Slopes is now used or is proposed for use for a wide variety of purposes. The Canadian Petroleum Association supports continuation of this multiple land use in the area and submits that this concept is necessary to maximize the benefit to the people within the area and to the Province as a whole. It is in the interest of all Albertans that the benefit of various land uses within the area be identified and assessed. Where land use is conflicting, consideration should be given to the contribution which development under each land use makes to the following:

1. Provincial income or revenues,
2. the Provincial economic base,
3. geographic distribution of economic development as measured by improvement in population distribution, local income and employment,

4. the well-being of Albertans, and
5. the quality of the environment.

These considerations can provide the basis for resolving allocation to conflicting land use, as well as for establishing an optimum mix of all land uses within the area.

Resource management necessitates identifying and measuring all present and future net benefit values arising from the development of natural resources. Many of the benefits are of an economic nature and are diffused throughout the economy, while others are of an intangible nature and not easily measured. The scope of the considered benefits should be broad enough to include all income effects including the value of production factors such as land, capital and labour. They should also include intangible benefits which cannot be quantified but depend more on value judgements. We recognize that land use is a dynamic process with changing benefits over time.

#### ECONOMIC BENEFIT OF OIL & GAS DEVELOPMENT DURING THE 1973-1990 PERIOD

The Eastern Slopes area is gas prone and is a highly prospective area for very significant additional discoveries of natural gas and associated natural gas liquids. In our opinion only about one-half the natural gas reserves have been discovered to date. We estimate another 24 trillion cubic feet of gas and one billion barrels of associated natural gas liquids will be discovered in the area.

While about two billion barrels of oil have been discovered in the Eastern Slopes to date, two thirds of the Pembina field lies within the boundaries of the area and accounts for about 60 per cent of the crude oil

discovered to date. The possibility of discovering another field of this magnitude on the Eastern Slopes is very remote. We therefore consider a reasonable estimate of the additional oil which will be discovered in the area to be 500 million barrels.

Reserves discovered to date are estimated at 2.05 billion barrels oil and 24.2 trillion cubic feet of natural gas along with 1 billion barrels of associated natural gas liquids.<sup>(1)</sup> A portion of these reserves has already been produced, and remaining existing reserves are estimated at 1.3 billion barrels of oil, 20.3 trillion cubic feet of natural gas and 0.8 billion barrels of natural gas liquids. About three quarters of the existing remaining reserves will be produced over the 1973 to 1990 period. About 30 per cent of the reserves forecast for new discoveries will be produced over the same period. It follows that production and associated revenues to both Industry and the Alberta Government will continue well beyond the 1973 to 1990 forecast period.

We forecast that during the 1973 to 1990 period the Oil and Gas Industry's operations on the Eastern Slopes will generate in the order of 5 billion dollars direct revenue for the Province of Alberta through royalty payments, rentals and land bonuses. About 60 per cent of these direct monetary benefits will accrue from production of existing reserves, while the remainder will be a direct result of exploration for and production from new discoveries.

During the same 1973 to 1990 period we forecast the Oil and Gas Industry will make capital expenditures in the area for exploration and development in the order of 6.5 billion dollars. Only about 25 per cent of

(1) Refer Appendix A

these expenditures would be associated with existing reserves.

The projected Oil and Gas Industry activities in the Eastern Slopes will have a significant impact on employment opportunities in the area and in Alberta. We expect new gas discoveries will result in construction of eighteen to twenty new gas plants within the Eastern Slopes Area by 1990. Operation of these plants and the new oil and gas fields, along with the associated transportation and service facilities should account for in the order of 2,500 resident jobs within the area by 1990. Looking at Alberta as a whole, the investment and operational activities forecast for the Eastern Slopes should result in 7,500 Oil and Gas Industry jobs directly dependent on these activities by 1990. When one extends this projection to include the impact on indirect employment within the Province as well, we can expect 52,000 direct and indirect jobs to be dependent on the projected activities outlined in this submission by the end of our forecast period.

#### LAND USE BY THE OIL AND GAS INDUSTRY

The Eastern Slopes comprises an area of approximately 27.5 million acres. A little over six million acres are designated as National and Provincial Parks and Wilderness Areas and are not available for development of oil and natural gas.<sup>(2)</sup> We wish to review the present use that is made by the Oil and Gas Industry of those lands on which the Industry is currently permitted to operate within the area. We also wish to outline the precautions and regulations<sup>(3)</sup> formulated to protect the environment and to ensure land used in exploration and development of oil and gas reserves can properly revert to other desired uses after completion of the interim

(2) Refer Appendix B

(3) Refer Appendix C

use by the Industry. The Industry's use of land is temporary, with its needs ranging from relatively short periods of time for geophysical surveys to generally in the order of 20 to 50 years for production and pipe line operations. We submit that the Oil and Gas Industry is operating on these lands in a prudent and responsible manner consistent with the multiple use concept.

Let us examine the operation of the various segments of the oil and gas industry as they explore for, discover and develop the hydrocarbon reserves of this area. A normal sequence would first see the field geologist at work, followed later by geophysical surveys, pointing the way for exploratory drilling. Hopefully, this would result in the discovery of hydrocarbons with subsequent development drilling; construction of production facilities and gathering lines; plant development and pipe line construction. We will discuss each of these activities, and the efforts made to eliminate permanent impact on the land.

#### GEOLOGICAL AND GEOPHYSICAL SURVEYS

Surface geologic surveys mapped many of the Foothills structures in the earlier days of the petroleum industry in Alberta. However, surface mapping is not applicable to much of the Eastern Slopes. Much of the deep structure is masked by glacial deposits and shallow thrust faults. Therefore, we must resort to mapping structure by indirect means; in particular, by geophysical surveys.

The geophysical industry forms part of a balanced exploration program in the search for gas and oil. As such, it has played an active role in the Foothills of the Eastern Slopes of The Rockies since the early 1950's. Geophysical exploration includes seismic, gravity and magnetic



methods with the seismic method being the most widely used and as such has become synonymous with the geophysical industry in the Foothills. The seismic crews first gained access to the Foothills areas by existing municipal or Forestry roads and lumber trails. Bulldozers were then used to cut lines of profile, usually as straight as possible, across the areas to be mapped. In the early years, this bulldozing contributed to problems of erosion and siltation. On the plus side, the new trails provided increased access to certain areas for the lumbering and cattle industries, to the sportsman and even to the fire-fighter.

Evolution of new techniques, operational procedures and regulations have effectively reduced and in most cases eliminated the detrimental aspects of seismic operations on the environment.

A typical present-day seismic crew consists of some 40 men plus a diversity of equipment; bulldozers, portable drilling rigs, recording, shooting and surveying vehicles. These are track mounted for summer operations and may be either tracked or wheeled in winter. When working in Forest Reserves the party manager of such a crew maintains close contact with the local Ranger who is empowered with the authority to suspend operations in violation of regulations or when there is risk of excessive damage to the terrain. Further supervision is provided by the client oil company to ensure that all regulations are followed.

The geophysical industry operates under regulations of the Provincial Department of Mines and Minerals and the Department of Lands and Forests. Regulations of the latter department prevail in the Green Areas which cover much of the slopes of The Rockies.<sup>(4)</sup> Programs must be presented

(4) Refer Map in Appendix B

to the Forestry Department for approval, 21 days in advance, so that any problems related to the environment may be checked out. Lines must be located so as to avoid streams wherever possible and to minimize stream crossings. Stream crossings are given special attention with respect to the angle of approach, materials used for the crossings and subsequent restoration to prevent damage to streams. Upon the completion of the program all cut lines and detours must be restored as closely as possible to their original condition. All felled trees are lopped so that they fall to the forest floor and grass is planted where the natural ground cover has been disturbed. On slopes, cross ditches are constructed to prevent erosion. Where cut lines are visible from existing access roads, complete disposal is carried out so that little evidence remains of the passage of the seismic crew.

The geophysical committee of the CPA has recently filed a brief with the Department of Lands and Forests. The brief supported continuation of present regulations for Foothills and pledged continuing and increased cooperation between industry and government regulatory groups. The submittal was endorsed and approved by the communities of Sundre, Rocky Mountain House and Edson areas where much recent seismic exploration has taken place.

The seismic industry is convinced that they can continue to operate in the Eastern Slopes of The Rockies without permanent damage to the environment and in an atmosphere of cooperation with the various government agencies.

#### DRILLING AND PRODUCTION

Let us now examine the drilling and production operations, their impact on the land and compatibility with other uses.

In the search for and development of oil and gas reserves in the lands covered by this hearing, approximately 9,000 wells have been drilled up to December 31, 1972. Of these some 2,150 have been abandoned. The remaining wells are either capable of production or are currently involved in producing operations, with nearly one half of these wells being in the portion of the Pembina field lying within the Eastern Slopes Area.

A very small percentage of exploratory wells are successful, hence, the required access roads to the well sites are constructed with a minimum of cutting and filling. Wherever possible existing lumber trails or seismic lines are utilized. The routing and standards of these access roads are approved by the appropriate regulatory authorities to assure minimum environmental alteration. If a well is unsuccessful and there are no other approved uses for the access road, a restoration program is undertaken whereby the ground is returned to its natural gradient and a grass cover established. The abandoned well sites are restored in the same manner. Within the Forest Reserves the local Forest Ranger inspects the clean-up and restoration work to ensure that it has been done properly. Similar action is taken when wells are drilled on privately-owned land.

If an exploratory well is successful and development follows, a more permanent road system will be built which may incorporate part or all of the initial access road. The locating of this more permanent road system is likewise reviewed with the local regulatory authority. The standards of construction ensure protection of natural drainage courses and the rights of way are cleaned up and seeded to grass to guard against erosion.

Drilling operations comply with government regulations which are designed to minimize environmental effects as well as to assure safe and

effective operations during drilling and testing. Surface locations are designed to prevent interference with or pollution of stream channels by diking and use of portable mud tanks.

Similar strict compliance with regulations is observed in the location, design and operation of all production facilities, gathering lines and processing plants. Existing legislation such as the Oil and Gas Conservation Act, the Clean Air Act, the Clean Water Act and Pipe Line Regulations ensure that all industry operations have limited impact on the land. Equally important are those precautions taken to ensure public safety in the vicinity of such operations.

#### PIPE LINES

From the oil and gas fields of the Eastern Slopes extend pipe lines of various sizes which carry the product to market. As in any form of transportation, distance is critical and as direct a route as possible is selected consistent with the terrain.

The industry makes contact with government bodies to determine future plans with regard to road construction, parks and wildlife preserves. In the more rugged terrain an effort is made to avoid steep side hills and to minimize stream crossings. The care exercised in route selection not only reduces damage during line construction but minimizes the subsequent restoration program.

Line construction commences with clearing of the right-of-way. In agricultural areas the top soil is stripped and windrowed and later replaced. Backfilling and cleanup is performed to prevent mixing of the top soil with the subsoil.

In forested areas, all commercial timber is logged in the conventional manner prior to the machine removal of smaller trees and brush along the right-of-way. The latter material is burned and the residual stumps and debris buried with at least 24 inches of inorganic material. Should any debris enter a stream it is removed during the back-filling and cleanup operations. After the pipe has been installed and such other operations as may be necessary have been completed, material excavated from hillsides, creek banks, drainage ditches, small streams and washes is replaced. The finished right-of-way is protected from erosion by rip rap, water-ways, terraces, culverts or other erosion control where necessary. All access roads and any private roads are restored to the satisfaction of the Department of Lands and Forests or if applicable, the private land-owner. The right-of-way is reseeded to grass, except for cultivated land, and the area soon becomes stabilized with new vegetation. The growth of brush and trees is discouraged by mechanical or chemical means so that the location of the line can be readily identified. Concentrated air patrols in early spring and run off season pinpoint areas requiring stabilization and permits remedial action as quickly as possible.

#### EMERGENCY MEASURES

In addition to the routine precautions described above, Industry has taken steps to control emergency situations should they arise.

Fluid spills caused by mechanical failure or human error must be anticipated and appropriate steps taken in equipment design, maintenance, and personnel training to minimize such misfortunes. It is also important

that all spills be effectively contained and cleaned up. The above undertakings are the responsibility of each operator; however, industry has officially established some twenty "Oil Spill Co-operatives" so that the entire resources of the petroleum and support industries can be quickly employed when required to cope with a misadventure of this type. Through this co-operative approach emergency equipment has been assembled and stored in large trailer vans so that it can be dispatched at any time of the day or night to a spill site. Four such trailers are maintained on the alert and available if required in the Eastern Slopes area. In addition the Co-operatives have an emergency supply of oil spill containment and clean-up equipment available at major producing areas. The acquisition of this equipment is another manifestation of industry's efforts to protect the environment.

#### THE TURNER VALLEY EXPERIENCE

In our submission we have stressed the temporary nature of the Oil and Gas Industry's use of land and the precautions taken to permit the land to later revert to other desired uses. To illustrate our point we would draw to your attention the evolution of land use in the Turner Valley field area.

Gas was first obtained from this field in 1914 with sour wet gas production commencing a decade later. Development operations were carried out using the technology and approved practices of the day with little concern for the impact that operations might have on the environment. Initially large amounts of gas and associated hydrogen sulphide were flared in the production of marketable liquids. This emission occurred through very short

stacks and often at ground level in surface pits. Vegetation was adversely affected immediately around the flare pits, however degradation was generally not evident elsewhere.

Utilization of the reserves together with the application of advanced technology and operating practices have since undergone many changes. Gas conservation and sulphur recovery were instituted and have evolved to modern standards. The multitude of production facilities that once dotted the landscape disappeared as production has been consolidated into central and more efficient installations. Former sites have been reconditioned, and have reverted to other land uses.

The results of upgrading facilities, and minimizing and reconditioning land used has been very rewarding. Ranches, farms and small acreages presently occupy land that once was covered by antiquated production operations. The ever increasing demand for land in and around this field is, we suggest, concrete evidence that man and nature have been successful in restoring the environment to a degree that is acceptable to today's society.



SUMMARY AND CONCLUSIONS

1. Multiple land use is necessary to maximize the benefit to the people within the Eastern Slopes area and to the Province as a whole.
2. In order to establish an optimum mix of all land uses within the area and resolve allocation to conflicting land use, consideration should be given to the contribution which development under each land use makes to the following:
  - (a) Provincial income or revenues,
  - (b) the Provincial economic base,
  - (c) geographic distribution of economic development as measured by improvement in population distribution, local income and employment,
  - (d) the quality of the environment.
3. Remaining undiscovered oil and gas reserves in the Eastern Slopes Area are estimated to be in the order of 24 trillion cubic feet of gas, one billion barrels of associated natural gas liquids and 500 million barrels of crude oil.
4. During the 1973 to 1990 period the Oil and Gas Industry's operations on the Eastern Slopes are expected to generate in the order of 5 billion dollars direct revenue for the Province through royalty payments, reserve taxes, rentals and land bonuses. This direct economic benefit to the Province will be accompanied by a significant positive impact on employment, both within the Eastern Slopes and Alberta.
5. Additional benefits will extend through:
  - (a) improvement in the economic base of the area,
  - (b) the wide use made of roads and power lines for commercial

- and agricultural endeavours, and for recreational purposes, and
- (c) the impact that extension of roads and power lines has on the well-being of many rural residents.
6. Only a small percentage of the surface is used in recovering the oil and gas resources from the subsurface.
  7. Precautions and regulations to protect the environment assure that the Oil and Gas Industry's use of land is compatible with other land uses.
  8. Oil and gas operations have a limited life after which land used can, with proper restoration, revert to other approved use.
  9. Not only is there an increased awareness by all for the need to protect the environment and make maximum use of our resources both renewable and non-renewable, but great advances have been made in the development and application of new technology to improve operating efficiencies and protect the environment.

The Canadian Petroleum Association contends that with proper planning and prudent operations, exploration for and development of oil and natural gas can continue to be carried on simultaneously with other local land uses, without degradation of the value for these other uses and in many instances complimentary to them. The Oil and Gas Industry is conscious of the need to protect the environment and we contend that, under appropriate regulations, it can develop the petroleum resources within the area in a manner which safeguards the environment and ensures land used can revert to other desired uses once the oil and gas resources have been withdrawn.

APPENDIX "A"HYDROCARBON AND SULPHUR RESERVES

. Following are the reserves in the Eastern Slopes area as  
 estimated by the CPA Reserves Committee at December 31, 1972:

|                                      | <u>Proved<br/>Ultimate</u> | <u>Probable<br/>Ultimate</u> | <u>Cumulative<br/>Production</u> | <u>Proved<br/>Remaining</u> | <u>Probable<br/>Remaining</u> |
|--------------------------------------|----------------------------|------------------------------|----------------------------------|-----------------------------|-------------------------------|
| Oil - Billions Bbls.                 | 1.85                       | 2.05                         | 0.76                             | 1.09                        | 1.29                          |
| Gas - Tcf                            | 20.8                       | 24.2                         | 3.9                              | 16.9                        | 20.3                          |
| Nat. Gas Liquids -<br>Billions Bbls. | 0.90                       | 1.02                         | 0.22                             | 0.68                        | 0.80                          |
| Sulphur - Millions LT                | 95.0                       | 118.5                        | 13.4                             | 81.6                        | 105.1                         |

APPENDIX "B"EASTERN SLOPES AREA

The Eastern Slopes Area, as designated by the Environment Conservation Authority, comprises an area of approximately 27.5 million acres.

Approximately 21% of this area is not available for development of Petroleum and Natural Gas as it is designated as National and Provincial Parks and Wilderness Areas. The Parks and Wilderness Areas within the Eastern Slopes Area are as follows:

National Parks

|          | <u>Acres</u> |
|----------|--------------|
| Banff    | 1,640,960    |
| Jasper   | 2,688,000    |
| Waterton | 129,920      |
|          | <hr/>        |
|          | 4,458,880    |

Wilderness Areas

|                          |           |
|--------------------------|-----------|
| Siffleur                 | 101,843   |
| White Goat               | 312,781   |
| Ghost River              | 37,850    |
| Willmore Wilderness Park | 1,135,872 |
|                          | <hr/>     |
|                          | 1,588,346 |

Provincial Parks

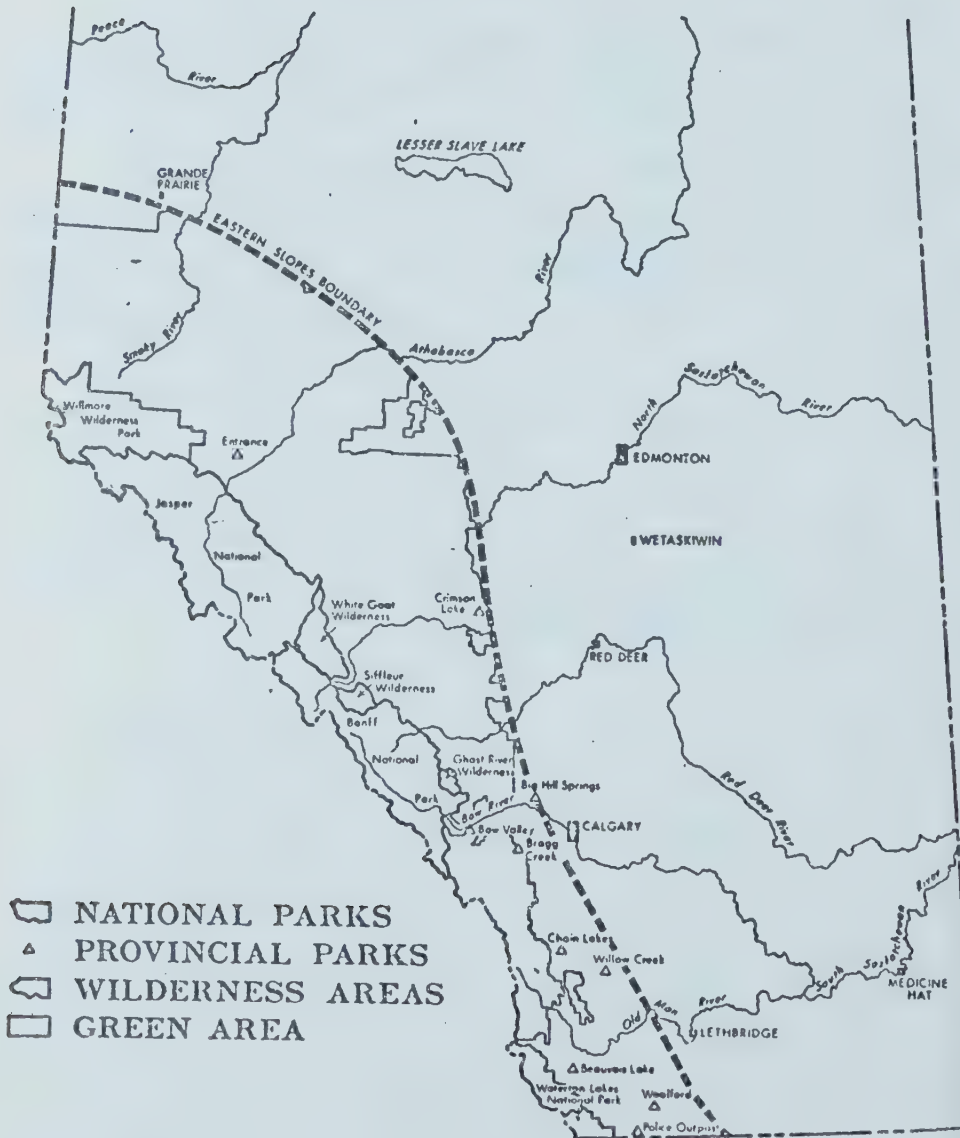
|                                              | <u>Acres</u> |           |
|----------------------------------------------|--------------|-----------|
| Beauvais Lake                                | 1,165        |           |
| Big Hill Springs                             | 63           |           |
| Bow Valley                                   | 2,309        |           |
| Bragg Creek                                  | 302          |           |
| Chain Lakes                                  | 1,011        |           |
| Crimson Lake                                 | 7,873        |           |
| Entrance                                     | 6,618        |           |
| Police Outpost                               | 362          |           |
| Willow Creek                                 | 76           |           |
| Woolford                                     | 87           |           |
|                                              | <hr/>        |           |
|                                              | 19,866       |           |
| Total Acreage for Parks and Wilderness Areas |              | 6,067,092 |

The area shown colored in green on the attached plat is designated as Public Lands and is managed by the Department of Lands and Forests for multiple use including forest production, water, recreation, fish and wildlife, grazing and industrial development.

# ALBERTA

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## EASTERN SLOPES RESOURCES DEVELOPMENT AREA



APPENDIX "C"LEGISLATION AND REGULATIONS PROTECTING THE ENVIRONMENT

The following Acts and Regulations in force in Alberta at the present time ensure that environmental disturbance from oil and gas operations is kept to a minimum:

1. The Surface Reclamation Act
2. The Public Lands Act
3. The Clean Air Act
4. The Clean Water Act
5. The Mines and Minerals Act
6. The Oil and Gas Conservation Act and Regulations
7. The Public Lands Surface Reclamation Regulations
8. The Geophysical Regulations
9. Mineral Surface Lease Regulations
10. Licence of Occupation Regulations
11. Pipe Line Regulations

Prior to entry upon any Crown land, applications for entry upon the surface of the land must be made to the Special Land Use Section of the Department of Lands and Forests. A Letter of Authority issued by this Department outlines a number of conditions

.....2



which must be followed to ensure that surface disturbance is minimized. These conditions ensure:

1. Local Forest Officers are contacted prior to commencement of operations.
2. Brush and debris are disposed of in a manner in accordance with the subject regulations.
3. Existing cut lines are used wherever possible.
4. Lands be kept free and clear of all waste and debris resulting from operations.
5. Safeguards and precautions are exercised to avoid inception of soil erosion and siltation of any watercourse.
6. Earth cuts and fills are properly backsloped and seeded.
7. Precautions must be taken to prevent any deleterious material from leaving or escaping from the confines of a wellsite or from entering any stream or watercourse, and that any company shall abide by any direction that may be given in this connection by an officer of the Minister.

.....3

8. At the completion of drilling, the entire wellsite area must be seeded to a proper tame grass seed mixture.
9. Merchantable timber must be salvaged as directed by an officer of the Minister.
10. Pipe Line rights-of-way must be restored as near as may be practically possible by establishing a satisfactory vegetative growth.

All existing oil and gas facilities within the Green Area are subject to routine inspections by Forestry officers. Inspection reports are then prepared and submitted to the Company involved. Unsatisfactory conditions are noted and these must be rectified.

Facilities on privately owned lands are subject to inspections by officers of the Energy Resources Conservation Board and as is the case in the Green Area, unsatisfactory conditions are reported and remedial action is recommended.

ABANDONMENTSGREEN AREA

Before any right-of-way (i.e., road, drilling site, pipe line) can be surrendered, the area must be restored as nearly as is possible to its natural condition. This may involve contouring, re-seeding and in some cases even the planting of trees.

The lands are again inspected by an officer of the Minister of Lands and Forests pursuant to the Public Lands/Surface Reclamation Regulations; and if the site is found to be in a satisfactory condition, the disposition is cancelled. This does not, however, relieve a company of further reclamation work if so required.

PRIVATELY-OWNED LANDS

Facilities to be abandoned held on privately-owned lands are subject to the Surface Reclamation Act and Regulations. The surface of the land must be reclaimed and a lease cannot be cancelled until the Surface Reclamation Council has been satisfied that clean-up operations have been duly completed.

June 25, 1973

Environmental Conservation Authority,  
9912 - 107 Street,  
EDMONTON, Alberta.

Attention: Dr. Walter Trost

Dear Sir:

Re: Land Use and Resource Development  
in the Eastern Slopes

You will recall our conversation following my presentation of a summary of the submittal from the Canadian Petroleum Association to the Environmental Conservation Authority in Calgary on June 18, 1973. You had a question at that time concerning seismic operations during the summer season. Summer operations are only briefly mentioned on page 7 of our submittal.

I have since been in contact with our CPA Geophysical Committee and am now in a position to give a more concise answer to your query.

The seismic industry is highly seasonal with the majority of work being performed during the winter months; This is particularly true of the frontier areas where access is impossible during the warmer months. However, within the Eastern Slopes of the Rockies a considerable percentage of the work has always been done in summer, using tracked vehicles. In areas of rugged terrain operations can be very hazardous on icy slopes in the winter.

There are, of course, areas which are too wet and swampy to work in the summer and others where the feasibility of operations depends on weather conditions. Applications to conduct work in the various areas are considered on an individual basis by the Department of Lands and Forests. Operations are conducted with a good deal of contact between Forestry officers and the crews.

Dr. Walter Trost

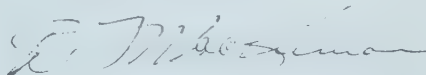
291-26

June 25, 1973

In our recent submission to the Environmental Conservation Authority, reference was made to an earlier brief concerning Exploration in the Alberta Foothills, presented to the Department of Lands and Forests by the Geophysical Committee of the CPA. We are taking the liberty of enclosing a copy of this brief and feel that it may be of interest to your group.

Yours very truly,

CPA Environmental Conservation  
Committee



D.F. MacKinnon, Chairman  
Eastern Slopes Task Force

DFM/dm  
Attch.

cc: H. Becker, Chairman  
E.C.C. of the CPA  
Hudson's Bay Oil & Gas Co.

291-27

COMMENTS.

to the  
DEPUTY MINISTER  
of the

ALBERTA DEPARTMENT OF LANDS AND FORESTS

with respect to

PROPOSED RESTRICTIONS

on

EXPLORATION IN THE ALBERTA FOOTHILLS

by the

CANADIAN PETROLEUM ASSOCIATION  
ALBERTA DIVISION

SEPTEMBER 1972

## INTRODUCTION

These comments express the views of the Canadian Petroleum Association on the proposed new regulations which would place additional restrictions on exploration activities in the foothills and neighboring areas of southwestern Alberta.

The Canadian Petroleum Association wishes to register its concern to these proposed restrictions. Our position is supported by geophysical contractors, suppliers and affiliated industries and is reflected in the replies to a survey by the Geophysical Committee of the Canadian Petroleum Association. Copies of the questionnaires and representative replies are included as an addendum to this report.

The results of the survey also clearly indicate an urgent need for improved communication and understanding between industry and forestry officials of the Alberta Government. As corporate and individual citizens of Alberta, industry members respect the environmental impact of exploration, but we are equally concerned about unemployment and economic hardships that the proposed restrictions, if implemented, would cause directly to the geophysical industry and indirectly to a great many Albertans.

## INDUSTRY RECOMMENDS ALTERNATIVES

1. We recognize the possible impact of our activities on the ecology and environment and agree that proper controls are needed. To achieve the most beneficial results, we are fully prepared to co-operate and work with the Department of Lands and Forests to minimize and keep within liveable standards any possible ecological disturbance.



2. We recognize that closer liaison and communication with the Department of Lands and Forests is not only desirable but essential. Industry has demonstrated its willingness to accept some extra cost and support additional personnel to enhance this relationship.

In an effort to achieve this objective, we recommend that regular meetings be held, at specified time periods, between representatives of the Department of Lands and Forests and industry personnel; allow both parties to assess, discuss and remedy problems before they develop or become aggravated.

3. We suggest that the present regulations, perhaps with minor modifications, be retained by the Department of Lands and Forests. We believe that basically the existing regulations are adequate if properly interpreted, applied and enforced.
4. We feel that a greater effort is required in planning programs and properly assessing the many variables which exist in the field. Stream crossings are of particular concern and close liaison is needed between the Regional Forest Ranger and Party Manager to minimize any undesirable effect on the degree of stream pollution. We believe this is an area where judgment, foresight and concern will accomplish more than rigid regulations.
5. When a previous cut line is being used for either access or production purposes the contemporary company should be held responsible for environmental control, line clean-up cost and for restoration of the area as close as possible to its original condition. This will require some modification and close supervision and enforcement of present regulations.

6. We do not consider the proposed "Zone System" as realistic or readily workable. Rather than have blanket restrictions, we propose that each area be considered on its own merit with regard to its peculiar terrain, time of year and precipitation. We are of the opinion that the resident ranger and a responsible field supervisor can make the day to day decisions and properly judge whether conditions are suitable for a seismic operation to commence, continue, be suspended, or deferred. We therefore, suggest that any restrictions be applied in a manner analogous to the imposition of road bans on provincial or municipal roads.
7. The Canadian Petroleum Association supports the practice of conducting erosion control as soon as possible following seismic field operations, recognizing that there may be a need for exceptions in especially active areas and that some follow-up work may be required.
8. We realize that in highly sensitive areas special techniques will be required to minimize erosion and preserve the environment. These techniques include the use of hand cut lines, helicopter support and a proposed method of line cutting where the cut line could be offset by a blades-width at intervals down - slopes where erosional problems might be anticipated. The use of such specialized methods would be determined by the physical conditions encountered, such as degree of incline, soil type and vegetation, and would be mutually agreed upon by the local Forest Ranger and the exploring company.  
  
We are confident that many special techniques will develop through continued co-operation between the Department of Lands and Forests and industry.

PROPOSED RESTRICTIONS ARE CONTRARY TO ALBERTA  
PUBLIC INTEREST

1. A balanced exploration program is required if the geophysical contract industry is to remain viable. Exploration summer programs in the proposed restricted areas have been an integral part of this objective. Should the proposed restrictions be implemented, the seismic contract industry would be reduced to a three or four month operating season each year, an economically untenable situation. This has become even more critical with the increased exploration effort required in the highly seasonal frontier regions. Contractors require foothills exploration to justify their very existence. There must be a minimum level of activity to justify the contractors keeping the necessary equipment in the province. The alternative would be a major increase in cost of seismic prospecting which is already at record high levels. This would no doubt have the immediate effect of reducing exploration in Alberta.
2. Reduced exploration efforts would have its strongest impact on those companies which are native to western Canada and do not have the flexibility of moving equipment and personnel to other regions. Those affected would include local construction companies, supply companies, geophysical contractors, caterers and many other ancillary businesses, the majority of which are Alberta based companies.
3. We regard as unrealistic the application of rigid dates and formalized zones to seismic activity. There are areas within the proposed "winter only" zones that are too hazardous to work during the winter months and could only be worked at great risk to personnel as well as the environment. In areas of steep terrain,

winter operations require more detours and side hill cuts to reduce the danger regardless of whether wheeled or tracked vehicles are employed.

We appreciate that the zone boundaries were determined considering average soil conditions, stream gradient and precipitation . We must point out, however, that seasonal rainfall varies greatly from year to year and from one very local area to another.

4. The proposed restricted areas contain many of Alberta's most productive gas fields. These same areas are also considered by many to have the greatest remaining potential for future discoveries and can be expected to attract substantial exploration funds being spent in this province.
5. We are seriously concerned that the proposed regulations will result in an increase in the already serious departure rate of competent experienced people from the geophysical industry in western Canada to other areas or to other fields of endeavor. Once experienced men accept employment in foreign countries or other industries, they seldom return. The possible result would be that when the next surge in exploration activity occurs, there would be a shortage of men sufficiently experienced to satisfy the highly technical requirements of both industry and the Department of Lands and Forests.
6. Equally important from an environmental stand point would be the accelerated loss of personnel who are experienced in ways and means of minimizing ecological damage. This is a continuing

educational process and should seismic activity be restricted to a three to four month per year basis, it must be accepted that personnel standards probably will deteriorate.

7. A great deal of progress has been made in recent years to minimize erosion and environmental damage in seismic operations. A major contribution by the geophysical industry to that end has been the pioneering in the development and use of tracked and low pressure tired vehicles. Incidentally, this has led to the establishment of a manufacturing industry based in Alberta which now competes successfully in world markets.
8. The seismic industry has always co-operated with regulatory bodies and we believe that this spirit of co-operation will continue to the benefit of all parties involved and in the overall interest of all Albertans.

#### SUMMARY

The Geophysical Committee of the Association, representing the geophysical industry in Alberta, opposes the proposed regulations because of their impact on the geophysical and related industries, which may result in reduced employment opportunities in Alberta.

We firmly believe that the objectives of the Department of Lands and Forests and of the Department of the Environment can be met if the present regulations, with some modifications, are adhered to and properly enforced. We are convinced that combined constructive thinking and planning can achieve our mutual goals.

ADDENDUM

We are also including letters from the communities of Rocky Mountain House, Sundre and Edson, which are located within the boundaries of the proposed restricted zone. They oppose the proposed restrictions on exploration because of the detrimental economic affect it might have on their communities. They also realize however, that regulations with proper supervision are required to preserve the ecology.

In addition, we are enclosing a letter from the Canadian Society of Exploration Geophysicists with a membership of 1015 people. The Society is alarmed at the possible serious implications if these restrictions were to be applied, and fully support the counter proposals of the C.P.A.



## QUESTIONING BY THE AUTHORITY

DR. TROST:

In the earlier submissions the particular aspect of the oil and gas industry that has drawn the most comment is the exploration phase, particularly the seismic lines that have been cut for it and so on. Do you feel that this is the most difficult area to manage from the oil and gas industry's point of view?

MR. MCKINNON:

As pointed out in the brief, submissions have been made to the government. With the present format this is very carefully governed and regulated by the Department of Lands and Forests which takes care of siltation in particular. I think that was the largest concern. The very visible straight lines through the country bring criticism, but I don't think this is what can be called environmental damage because, from my experience with the oil industry, the trees and growth rehabilitate the damage quite rapidly.

DR. TROST:

Are exploration techniques still of the kind that require as many seismic lines to be cut now as heretofore?

MR. MCKINNON:

My information is that the seismic technique is most commonly required in the foothills type area since all the geological type surveys do not apply. They are masked with glacial drift and overthrust faults and so on, and to identify properly any potential reservoirs they have to use seismic techniques.

MR. KINISKY:

From your brief it appears that the Canadian Petroleum Association is actually asking for access to virtually all the areas of the eastern slopes, contending that there is nothing they conflict with. Is this correct?

MR. MCKINNON:

Essentially, we advocate multiple use. We can live with just about anything and they can live with us.

MR. KINISKY:

You stated that the petroleum people are very small users of land, yet we have heard today that more timber was wasted in the cutting of seismic lines than the entire forest industry used commercially. There seems to be some conflict of opinion there.

MR. MCKINNON:

I listened to that statement and I would say offhand that the person who made it hadn't gone into the details very thoroughly. The oil and gas industry has an arrangement whereby commercial timber is logged off. Any other timber they pay for. They pay stumpage. In other words, the revenue to the Crown is equal to or greater than what they would get otherwise - I would say equal to. Many trees are knocked down in a seismic exploration that really don't have much commercial value, if any.



MR. KINISKY:

Another slight conflict arises in that it is the opinion of your association that all of these access roads do something to enhance the foothills areas in one way or another for recreational access or reasons like this. Yet we have had before us in this set of hearings a number of people from wilderness associations who have strongly objected to the unlimited access which is, in fact, being provided because of the exploration processes.

MR. MCKINNON:

I have great interest in recreation in the eastern foothills area. I was born and raised in the eastern foothills of the Rockies and I have worked in the eastern slopes for most of my working life. I suppose I was as much or more interested in hunting as many of the professionals we have here today.

I would mention the Pembina field to illustrate your question. When I first went into the Pembina field it was a pretty sad place. People were living on what I would call stump farms. Then the oil industry came in. Roads were built and subsequently powerlines followed and so on. I think it definitely improved and complemented this area.

Now for the recreation part of it, the particular area I was concerned with in the Pembina field was, I suppose, better than average hunting country and, although the hunters were a great nuisance to us as oil operators on our roads and so on and sometimes a little dangerous to our people, our facilities are very much used for access by hunters.

MR. DOWLING:

Relating to your summary and conclusions in which you say, "Consideration should be given to the contribution which development under each land use makes the following..." At the top there is provincial income and revenues, and the fourth point is the quality of the environment. I'd like to know whether you consider these to be priorities and, if so, if they are listed with the highest priority being 2(a)?

MR. MCKINNON:

I don't think we put them in as a priority. In some areas I think provincial revenue might come first. In other areas maybe environment would come first. If you were situated on the Saskatchewan River or the Bow River I would think the governing bodies would take a pretty hard look at the quality of the environment, whereas in other areas, maybe of less consequence environmentally, they would regard it as potentially for provincial revenue.

MR. DOWLING:

Has exploration for gas and oil on the eastern slopes been restricted to winter months in order to restrict erosion damage?

MR. MCKINNON:

I don't work in the seismic branch, but one of the team that prepared the final draft was a seismic man and he informs me that's correct.

DR. TROST:

Is it an effective control on erosion?

MR. MCKINNON:

I would think yes, in that when the ground is frozen you get a limited amount of gouging. They skim off the brush that's bothering them and leave the grasses and sod and so on intact.

DR. TROST:

They add that they have knowledge of erosion problems in the Swan Hills area from seismic lines.

MR. MCKINNON:

My work hasn't involved too much Swan Hills experience. I was in the Swan Hills on a stabilization problem and I suppose that in an area like this any activity would tend to contribute to erosion. It's very hilly with steep grades and a high rainfall. I would say there was some erosion caused by that. The area I looked at was a natural area of erosion with very silty, quartzzy soil, which makes the typical hoodoos you have up in the Banff area. I don't think it would matter much whether there were any activity there or not. There would be erosion there. It's a very, very erosion-prone area.



294-1

BRIEF

on

LAND USE FOR RECREATIONAL PURPOSES

in the

BOW RIVER FOREST WITH PARTICULAR EMPHASIS

on the

BOW RIVER BASIN

by

CALGARY SNOWMOBILE CLUB

Presented by: A. G. Savage

PREFACE

This brief was prepared by a committee of Club members who have attempted to present the Clubs view points on the Bow River Basin, Wilderness Areas, Wild-land Areas and possible opportunities in tourism.

A. G. Savage  
Chairman

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1. Purpose of Brief.
2. Calgary Snowmobile Club.
3. Objective of the Snowmobile Club.
4. Conclusions.
5. Recommendations.
6. Populations Growth of Calgary and Surrounding Area.
7. Number of Snowmobiles in Calgary and Surrounding Area.
8. Snowmobile Usage.
9. Necessity for Providing Suitable Snowmobile Areas.
10. Wilderness Areas Already Established.
11. Discussion.
12. Map - Bow River Basin.
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PURPOSE OF THE BRIEF

The purpose of this brief is to present the viewpoints of the Calgary Snowmobile Club to the Government of the Province of Alberta through the Public Hearings on Land Use and Resource Development in the Eastern Slopes.

The Calgary Snowmobile Club is generally concerned with Land Use for Recreational Purposes in the Bow River Forest and in particular with Land Use for Recreational Purposes in the Bow River Basin.



THE CALGARY SNOWMOBILE CLUB

The Calgary Snowmobile Club, duly registered under the Societies Act, is a family club devoted to the promotion of family activities and not engaged in racing or other competitive aspects of the sport. The club was formed in 1964, in the early days of snowmobiling, by a group of people interested in the comradeship offered by this new sport. They were interested as a club in upgrading the image of snowmobiling, in assisting in the drafting of resolutions and proposals to enable legislation to be intelligently instituted for the guidance and control of this growing sport.

THE OBJECTIVES OF THE CALGARY SNOWMOBILE CLUB

- A. To promote snowmobiling in the Calgary areas on a non-profit basis.
- B. To bring snowmobilers together for mutual enjoyment.
- C. To sponsor safety programs whereby owners and operators of snowmobiles obtain instruction on proper operating procedures, proper equipment maintenance, proper winter survival techniques, and proper methods of avoiding all manner of hazards connected with the sport.
- D. To establish liaison with Parks and Recreational Officials on matters pertaining to snowmobiling.
- E. To work with the Alberta Snowmobile Association in researching problems created in Alberta by snowmobiling and to offer assistance in the drafting of sound, safe and fair snowmobile legislation.
- F. To work with the Alberta Snowmobile Association to establish snowmobile trails in the Province of Alberta.

CONCLUSIONS

The Government of The Province of Alberta must provide the people of Alberta with adequate recreational areas and facilities in the Bow River Forest generally and the Bow River Basin in particular for year round use.

The Sheep Creek-Elbow area in the Bow River Basin should be developed further to serve the year-round needs of the people of Calgary and surrounding areas. Similar areas in the Bow River Forest should receive the same consideration.

The Department of Lands and Forests has served the needs of the population of Calgary and surrounding areas in the Bow River Forest on a basis of providing for all groups, to the best of their ability, as the need arose.

The Calgary Snowmobile Club, as a winter outdoor activity group, sees no reason to lose the right to use roads, trails, seismic lines or open areas in the Bow River Forest in general or the Bow River Basin in particular.

RECOMMENDATIONS

It is recommended that the establishment of additional Wilderness areas and buffer zones or Wildland areas in the Bow River Forest not be allowed, and especially so in the Bow River Basin.

That multiple use for recreational purposes on a year-round basis in the Bow River Forest and the included Bow River Basin be maintained for the benefit of all the population.

That the Department of Lands and Forests continue to administer the Bow River Forest on the present basis.

That the Calgary Snowmobile Club continue its present use of the Bow River Forest, and the prime recreational area within the Forest known as the Bow River Basin.

POPULATION GROWTH OF CALGARY AND SURROUNDING AREA

The 1973 population of Calgary is 430,300 in the medium range as estimated by the City of Calgary Planning Department.

The projection for the future in the same medium range indicates the population of the City of Calgary will be 722,700 people in the year of 1991.

The surrounding area is taken as a thirty-mile radius, more or less, from the centre of the City of Calgary. This will include the towns of Airdrie, Cochrane, High River, Okotoks, Strathmore, Turner Valley, etc.

The estimated population in 1973 of the surrounding area is over 100,000. For the year 1991 population projections would show a figure of approximately 200,000.

The combined population in 1973 of the City of Calgary and surrounding area is well over 500,000 people. In 1991 the population may be near the 1,000,000 mark.

NUMBER OF SNOWMOBILES IN CALGARY AND SURROUNDING AREA

The estimated number of snowmobiles in the City of Calgary was better than 16,000 in 1973.

For the surrounding area the number of snowmobiles is estimated at 4,000 for 1973.

The total estimated number of snowmobiles for Calgary and surrounding area is estimated then to be 20,000 for 1973.

In 1991 with the doubling of the population in Calgary and surrounding area the number of snowmobiles would likely increase to 40,000.

SNOWMOBILE USAGE

Snowmobiles are used by family groups and other groups.

The family group generally has one snowmobile and it is used by an average of 3.25 persons.

Other groups are comprised of single persons and their friends. This group may have a snowmobile usage factor of two or more.

Taking an average of three persons using one snowmobile; in 1973 the number of people involved in Calgary and surrounding areas is 60,000.

For the year 1991 the population of Calgary and surrounding areas is indicated to be double that of 1973. The number of people involved in 1991 will then be 120,000.

NECESSITY FOR PROVIDING SUITABLE SNOWMOBILE AREAS

With the snowmobile count in Calgary and surrounding area and the number of people using these machines, it becomes obvious that suitable areas and facilities must be provided to accommodate this wintertime activity. Such areas should be close to Calgary so that families and other snowmobilers do not have to travel great distances to snowmobiling areas. The Bow River Forest has offered convenient areas for the snowmobiling public in the Calgary area. For this group of people it will be necessary to keep all areas in the Bow River Forest presently used by snowmobilers.

One area under discussion at the present time is the Sheep Creek-Elbow area which is receiving attention from wilderness groups seeking to exclude all people and activity in the area except those on foot or on skis. The Calgary Snowmobile Club does not agree that a wilderness area should be established in this particular watershed.

With an increasing population during succeeding years the Bow River Forest will be called upon to provide increased outdoor facilities on a year-round basis.

The Elbow-Sheep area in the Bow River Basin is a prime recreational area, close to Calgary and well suited for multiple use by many people during the whole year. Waiparous Creek is also in the Bow River Basin but is not at the present time considered to be a prime area. It requires further development and may in the future relieve public pressure on the Elbow-Sheep area.

Other parts of the Bow River Forest, mainly the northern end, are outside the Basin, are more remote and less desirable.



WILDERNESS AREAS ALREADY ESTABLISHED

The Provincial Government has already established wilderness areas such as the Ghost River, Siffleur, Willmore and White Goat. With the establishment of these wilderness areas the creation of additional wilderness areas will not be required. In addition to the wilderness areas, the Government has established buffer zones adjacent to each of the wilderness areas. The extent of the buffer zone for each wilderness area has not been defined by the Government at this time. It may be noted that the wilderness areas are bounded on the west by Banff National Park or Jasper National Park. With the establishment of buffer zones in front of the wilderness areas, dead pieces of territory will be created in parts along the eastern slopes. It may be that the buffer zone adjacent to these areas will have an eastern boundary corresponding to the Forestry Reserve boundaries. Banff National Park is a restricted area in many parts, and together with the wilderness areas and their related buffer zones, has created large territories in which the population of Alberta will be prohibited from using. The addition of Wildland areas scattered along the mountain front only adds to the condition. This does not appear to be in the best public interest.

DISCUSSION

The Department of Lands and Forests over a number of years has attempted to meet the needs of the population for recreational purposes, in the Bow River Forest, by providing services and facilities as the occasion arose. Some of these are picnic grounds, camp grounds, restocking streams for fishing, control of big game, improvement of trails for forestry and fire fighting control, improvement of some trails for snowmobiling, etc.

The management of Forestry on the whole has been good. We see no reason to add to Forestry's burden, by the creation of another wilderness area in the Sheep Creek-Elbow River watershed.

The Calgary Snowmobile Club is composed of people who like outdoor activity both in winter and summer. In wintertime great pleasure is taken in snowmobiling in all the available areas in the Bow River Forest. In summertime the same people carry out activities such as fishing, hiking, trail riding with horses, minibikes, motorcycles and 4-wheel vehicles. Thus it is seen that this particular group can use recreational areas on a year-round basis and not for any one particular season.

We do not seem to have a precise definition of a wilderness area. If it is a true wilderness area where no human activity is allowed even on foot; then what value is a wilderness area to the people of Alberta.

The Alberta Government is presently promoting Tourism in all parts of the province and in many activities, both summer and winter. Why not include snowmobiling in the Elbow-Sheep area which is so handy to Calgary?

Tourism can be developed for snowmobiling much along the lines that skiing has enjoyed for the past several years. Ski packages are currently

Discussion

being offered to Eastern Canada and Eastern United States at ski resorts such as Banff, Sunshine and Lake Louise. Do we yet have Snowmobile packages to snowmobile resorts? Or do we wish to discourage snowmobiling and its potential tourism by the creation of more Wilderness areas. In this case then we may chase snowmobile business over the hill into British Columbia. Do we really want that?



CALGARY SNOWMOBILE CLUB  
MAP SHOWING BOW RIVER BASIN  
AND PROPOSED WILDERNESS AREA

June 1, 1973



REFERENCES1. REFERENCES:

- (a) Calgary Snowmobile Club Brief Re: "Snowmobile Use" dated February 16, 1972, presented to Calgary Recreation Board by Arnold Swaren, Vice-President.
- (b) Calgary Snowmobile Club Brief Re: "Snowmobile Use" dated March 14, 1972, presented to Standing Policy Committee Community Services by Arnold Swaren, Vice-President.
- (c) A submission on Snowmobile Legislation to the Government of Alberta from the Alberta Snowmobile Association.
- (d) Metropolitan Calgary Population Projections 1970-1991 by City of Calgary Planning Department.
- (e) Elbow Sheep Wilderness by Alberta Wilderness Association.
- (f) Information Bulletin No. 6 on Land Use and Resource Development in the Eastern Slopes. Bow River Watershed Basin report by Calgary Regional Planning Commission.





## QUESTIONING BY THE AUTHORITY

DR. TROST:

I notice that there is a small difference in point of view between the Calgary Snowmobile Club and the Wilderness Association. Are you intending to make a submission when the Elbow-Sheep Wilderness Area proposal is up for public hearing later this week? .

MR. SAVAGE:

This is our submission, sir.

DR. TROST:

And you wish this submission to be considered as an intervention in the hearing on that particular subject?

MR. SAVAGE:

Yes.

Brief submitted by: Miss L. Lundquist and Miss Shelly Robb  
 Sheep River 4-H Club  
 Black Diamond, Alberta

MISS LUNDQUIST:

We represent many of the young people of today, our friends through the high school, Sheep River 4-H Club, et cetera. There is a lot of agreement among them, but they can't all come here so we're going to give you their views as well as ours.

The Alberta Wilderness Association presented their brief this morning. Basically, it states that 1,500 square miles throughout the eastern slopes be set up as wilderness areas where no motorized vehicles be allowed, excluding those used for fire protection. The rest of the forest reserves should be left as they are with campsites and roads and limited amounts of mining, oil exploration and timber exploitation. When the Alberta Wilderness Association drew up this brief they looked at the land and chose very carefully what they have proposed for the wilderness areas. They tried to include all the important big game ranges and watershed systems, and to exclude the known productive resource areas.

We agree with this proposal wholeheartedly and feel that if such a wilderness area was properly enforced it would itself become a resource. Why we agree with the Alberta Wilderness Association is something that's a little more personal. Shelly and I found that we agreed on most of the points, so I'll let her explain why.

MISS ROBB:

There are three main bodies opposing the restricted Elbow-Sheep Creek wilderness area, the resource people, four-wheel drive and other owners, and recreational people. We have a thought for each of these three groups.

First a thought for the resource people. Scientists have estimated that our energy reserves will not last 200 more years. The proposed areas were carefully chosen as they have low productivity in these energy resource areas. We encourage the resource people to find another energy source, because the resources within this area do not have enough to save the world. While we're on the subject, we, as a group, have a suggestion for the gas and oil people. We want to hike them out about ten miles past Blue Rock where they will see first hand what they might be destroying instead of a cold sheet of facts and figures.

Now for the four-wheel drive and others. There is no place in the reserve now where you can walk for one day and not come to an access road or jeep trail. Jeepers should get off their backsides, colloquially, and get out and walk. Any wilderness area worth seeing at all should be seen at a slow speed instead of breezing by at 50 miles an hour. We agree that jeeps, motorcycles, et cetera are only status symbols - we are one up on the Joneses, we have a jeep.

For the recreational people, we would wish that they build camping sites, et cetera far outside of areas designated as restricted wilderness areas, so they will not be encroaching on or civilizing the wilderness areas.

Finally, we have a thought for everyone. If these wilderness areas are not protected, your grandchildren and our children are not going to know the difference between moss and concrete. The only way

we can ensure our heirs the pleasure of seeing a herd of bighorn sheep is to protect these areas now.

MISS LUNDQUIST:

May I add that we fully agree with the Alberta Wilderness Association and we shall support them in any way possible.

## QUESTIONING BY THE AUTHORITY

MR. KINISKY:

You are young people who very shortly are going to inherit whatever we leave behind.

MISS LUNDQUIST:

If you leave something.

MR. KINISKY:

If we leave something, indeed. In your opinion, are all the young people in your age bracket prepared to say, fine, we're going to give away all of these status symbols you have been criticizing and go for the preservation of our wilderness areas? Are you ready to live without the car and all the other gadgetry we've built up over these years?

MISS LUNDQUIST:

When I started this I said it was some of the young people. We're not from the city. We're country people, so we've had a little bit less of that. You can't get 100 per cent agreement in any group.

MR. KINISKY:

What do you think is the general opinion of the people in your age group?

MISS LUNDQUIST:

The people I know closely agree with me. I'm not sure if they'd be willing to give up their cars and their colour TVs, but I feel very strongly against jeepists and motorcyclists. That's personal.

A BRIEF TO THE  
ENVIRONMENT CONSERVATION AUTHORITY  
ON LAND USE AND RESOURCE DEVELOPMENT  
IN THE EASTERN SLOPES

" THE RIGHTS OF THE INDIAN"

Presented by:  
Chief John Snow  
Calgary - June 18, 1973

It is with a great deal of pleasure that I appear before this Board today. When Columbus first discovered America he mistakenly called my forefathers "Indians" as he thought he was in India. Today my people are still called "Indian", but it doesn't change the fact that we are the aboriginal inhabitants of this country and as such we are the only "true Canadians." This is our land and our country and we have a deeper love and attachment for it than the white man will ever be able to develop. Most of the non-Indians who live in this country think of themselves as being Scottish, English, Ukrainian, Italian, French or from some other foreign country. Only we Indians are real Canadians because this is our country and we don't think of some country over in Europe as being our home. It is because you people cannot regard this country as your true home that you have exploited all the resources and brought about as much development as possible for the sole purpose of making money without any consideration of what the development does to the land and we people who live on and use the land.

When the white man first came he found our forefathers living in harmony with nature. The whiteman wanted land, furs, gold, timber and the other riches of this country. His only interest was to take from the country without any concern of what would happen in the future. As you used up the resources in Eastern Canada, the white man had to move west in larger and larger numbers. My forefathers came in contact with these early settlers, trappers and traders with the result that conflicts arose and my forefathers became concerned about what would happen to the land and the way of life of the people when even more white people came. Finally in 1877 a Peace Treaty was signed between two governments - the Government of Canada and the Government of the Indian people. This peace treaty guaranteed that we Indian people would not wage war on the white settlers (as the Indians in the U.S.A. had done) so that farms, towns and cities could rise where once the buffalo thundered and where our people pitched their tents. In return the Government of Canada gave certain lands to us and guaranteed certain rights to us, including the

right to continue hunting, trapping and fishing. Most important of all, by signing the Treaties the Government was acknowledging the fact that the influx of white people to the area could result in tremendous changes and that the government would have to take steps to make sure that these changes would not have a detrimental effect upon the Indian. Today we have the Federal Government, Provincial Government, Municipal Government and who knows what other levels and kinds of governments. Somewhere along the way we Indians have been "lost in the shuffle" so that we now have a situation where the Provincial Government ignores us, even as citizens of this Province, simply stating that we are a Federal responsibility, and the Federal Government seems to have little interest in us and has done very little to protect our rights. While many of our people speak very little English and are not very well educated, we are now learning that most white people don't give a damn about the Indians and aren't even interested in finding out just what rights we do have and what the responsibilities of the governments are. We Indian people have to start fighting back and standing up for our rights. I welcome this opportunity to be able to raise some of the questions we Indian people have as to where we Indians can and should fit into all this planning and development that both the Government and private industry are involved in.

#### HUNTING, TRAPPING, FISHING

The treaty gave us the right to hunt, trap and fish on unoccupied crown land as long as the things taken were used for our own purpose. The treaty has not changed and on many reserves the Indian people are very dependent upon wild game for food and furs and hides for household uses and for making handicrafts. Every time the Government leases out land or sets up special areas such as "wilderness areas" they are restricting our use of the land because for all intents and purposes it becomes "occupied crown land". At the present rate, the right to hunt guaranteed



to us in the treaty will be meaningless because eventually there will be no more "unoccupied crown land." The Government sets up these special areas without any consideration for, or consultation with us Indian people, although we all too often are the people most directly affected by these changes. Usually the areas which become restricted in use are located near Indian reserves and it does have a great effect upon the people of that reserve. No previous thought is given to this and, even after we protest, nothing is done to change or to assist the people.

White people too often complain that Indian people are killing off the game and that Indians should be restricted in their right to hunt. It should be remembered that most Indians take only game that they put to full use for their personal needs. The meat they eat, the hides they tan to make buckskin which is used for many purposes and the horns and larger bones are used to make handicrafts. We Indians do not waste what we shoot and we do not hunt for "trophy" animals or for the "sport" or for the "thrill of the kill". Most of our people hunt because they really need the meat.

We Indians do not want to see the animals killed off. We want animals protected, but we also want our rights to be protected. Most of our people would be only too happy to co-operate and assist in proper conservation of these resources. One of the big problems that we encounter is that many of the local Fish and Wildlife Officers are very prejudiced against us Indians and that they attempt to give us a rough time rather than working with us to get our co-operation. Neither the Provincial Government nor the Federal Government has made any attempt to make my people knowledgeable about conservation or get our assistance in any area where there is a problem.

To give an example, our people who live on the Eden Valley reserve are not renowned for wholesale slaughter of wild animals in the area. They shoot a few animals for their food and they don't kill off the whole herd because they know they will need more food later on.

Over the years the Forest Ranger (not the Fish and Wildlife Officer) at the Sheep River station has met with the Eden Valley people and talked to them about conserving the bighorn sheep in his area. The result has been that these sheep have been left alone by my people. However, only recently I found out that the Minister of Lands and Forests has declared a sheep sanctuary in the Highwood area and restricted all hunting of the sheep. This action was taken without any consultation with my people or with me as one of the chiefs of this band. As far as I know there has been no attempt made to determine what if any effect this could have on the people at Eden Valley. This kind of arbitrary action by the Government without any consideration for our Treaty rights only makes me very angry and makes me not want to co-operate with the Government. The stupidity of Government people is at times totally unbelievable and it forever amazes me how some of these people get elected to office and how others retain their jobs as civil servants. Government has to become sensitive to the feelings and needs of people. The most important thing in life to me is the concern for the well being of another human being. I often feel that the Government is more concerned about trees, rocks and animals than it is about human life and human welfare. I realize that for years we Indians were regarded as "savages" and as such were possibly looked upon as being a very low form of life. After all, in Newfoundland they put a bounty on the Indian and effectively eliminated the "Indian Problem" by killing off every last Indian on the island. I can only hope that starting today we can change some of these attitudes.

My people are in favor of setting aside wilderness areas in which there will be no industrial development and the land will be left in its natural state. However, we will only support these kinds of proposals as long as our rights are guaranteed and we will continue to be able to hunt, trap and fish in the areas. If the Government is concerned about wildlife in an area they should restrict non-Indians shooting in the area and embark on a program of educating the Indian and getting our cooperation in conserving the game in that area. Furthermore, the Government

should make sure that tracts of land adjacent to and accessible to the people of a reserve are retained as unoccupied crown land so that the Indian is assured that he will have places where he can go to hunt.

#### CAMPING AND RELIGIOUS PURPOSES

The mountain areas of this province are held in special regard by the Indian people of Alberta. We feel that this is an area which is still close to the Great Spirit. My people go to the mountains to renew their spiritual strength. A lot of families move off the reserve during the summer and set up camp so that they can get away from the problems and frustrations they encounter in white society. The children ride their horses and learn how to live like an Indian in the bush. This is part of our culture and we are proud of it and do not want to change this pattern. Sundances and other religious ceremonies are held in some areas of the mountains. These areas have been used for hundreds of years by my people and we want to continue to use them.

I feel very strongly that the Government has a responsibility to make sure that Indian people are not using an area before they lease it out or develop it for some other purpose. The process of consultation and the working out of problems before you start a course of action would do wonders towards creating a better relationship between Indians and non-Indians. The whole process involved in planning and constructing the Big Horn Dam is a good example of how the Government should NOT go about developing an area.

#### COMMERCIAL DEVELOPMENT

I do not intend to go into any detail regarding specific commercial development. I want to point out that Indian Reserves are located at various places along the eastern slopes of the Rocky Mountains.

For years we Indian people have been under the direct control of the Federal Government and virtually nothing was done to develop the

resources. In recent years self-government has come to many of the reserves and our people want jobs and we are attempting to develop our resources in ways that would benefit our people. At present our financial resources and the technology of our manpower is limited. However, this is changing and developments are occurring on the reserve.

My basic concern is that there has to be continuous consultation between the reserve governments and the provincial governments to ensure that duplication of projects and sources do not occur. If the reserve has a development underway and the Government allows private enterprise to establish a similar development adjacent to the reserve, then there is a good chance that both developments will end up weak and may fail. Of even greater concern is the possibility that it may well be the reserve development which could not survive because we do not at present have the financial resources and skilled personnel to compete on equal terms. One must remember that there has been 90 years of government mismanagement, strict control and lack of development which we now have to overcome. We cannot be expected to change and learn everything in only a year or two. We must be given time to develop our own land so that our people and all Canadian people will benefit. When our reserves become productive and my people have regained their pride and strength, then this becomes a benefit to all Canadians. In the meantime the government has a responsibility to make sure that certain kinds of developments and enterprises are retained exclusively for the Indian people to develop. Furthermore, both levels of government should assist the reserves in bringing about these kinds of developments. This restriction should not apply just to Indian lands, but it should also apply to other crown land, in that the land should be designated to be used by Indian people in the development of a particular enterprise. The Stoney Band will present a brief with more details dealing with this particular aspect at the hearings in Canmore later this week.

CONCLUSION

I can only summarize what I have said by pointing out that at present there seems to be little consideration as to where the Indian fits into the overall development of Alberta. We Indians are not only citizens of this province, but we are citizens with special rights which must be taken into consideration before any specified use of the land takes place.

In general we want to see wilderness areas retained as such providing these areas do not put restrictions on our rights to hunt and trap within them. We are opposed to general commercial or industrial development of the the Rocky Mountain Forest area, however, we do recognize that certain development may be needed and be very beneficial to all Albertans. We feel that any developments should be carefully researched and provisions made to disturb the environment as little as possible and then to restore it as much as possible when the development is complete. Furthermore, any developments that are allowed should not conflict with existing or proposed developments on the Indian Reserves. Finally, the people, including Indians, who live in the area should be given all possible help to develop it themselves and guarantees should be made to ensure that the local people get the jobs in these developments.

I trust that what I have had to say will assist the board in arriving at its recommendations. Hopefully, the years to come will show that Governments and all Canadians are willing to recognize and to honor their responsibilities and commitments to us Indian people.

## QUESTIONING BY THE AUTHORITY

MR. KINISKY:

Chief Snow, has there ever been a time when the Indian bands wanted to discuss hunting matters with the provincial government and could not, in fact, find a time when the government would sit down and talk to them about these things?

CHIEF SNOW:

We presented a 400 page documentary report regarding our hunting rights to the provincial government, and so far there has been no positive response or no meetings or negotiations regarding this matter. As far as I know, we have done everything, otherwise I wouldn't be restating this.

MR. KINISKY:

You say that you are agreed that we should indeed set aside wilderness areas as long as they don't interfere with the hunting rights of the Indian people. If you've been to the hearings in the past you will have heard that the people wishing to establish the wilderness areas want to keep out motorized vehicles. Would this be agreeable to the Indian people?

CHIEF SNOW:

I think it would be agreeable. What we are concerned with is the hunting part. I'm sure we could find other ways of getting there.

MR. DOWLING:

Chief Snow, you've indicated that on many occasions you have been unable to discuss matters with the provincial government and that they have, in fact, not consulted your people with respect to developments and plans for the land. On what matters are your people consulted by the provincial government?

CHIEF SNOW:

There is hardly any consultation with the provincial government. We are often referred to as a federal responsibility. In the past we have made a lot of effort in trying to meet with the provincial government, but we seem to be a political football between the federal and the provincial governments.

MR. DOWLING:

In your brief you state, "In the meantime the government has a responsibility to make sure that certain kinds of developments and enterprises are retained exclusively for Indian people to develop." Can you give us some examples of what type of developments and enterprises you have in mind?

CHIEF SNOW:

I would think one area is guiding and trail rides. We are very familiar with this as Indian people. We have horses and we do a lot of riding. For example, we have requested in our presentation to the provincial government that we would like to get an opportunity to run our business in the Bighorn area. Since the dam was built there and



the superhighway and the tourists are coming in, we'd like to be part of that community and we'd like to do business.

One of our requests was to establish riding stables and horseback riding into the mountains and so forth. I understand this is now in the process of being turned over to a white person who will hire Indian people. Indians will be the joe-boys and instead of profiting from the business they will again only be working to make money for this white man.

This is one example. Another one is at Morley where we are starting to develop an Indian park with camping and trail rides. We have also planted fish in one of the lakes and would like to open up fishing for many of the tourists in that area. We have a buffalo paddock there. We are developing an Indian village and we're hoping to reconstruct the old Bow fort which was built in 1831 or so.

I understand there are similar kinds of developments proposed in the Canmore area, such as riding stables and so forth. This is right next to our reserve. We are also starting a game farm on the reserve. I heard there are proposals for another game farm next to the reserve. As I mentioned in the brief, this will only kill both businesses. If one is there I think it will be successful, but not if we're competing next door to each other. Our people are just getting out into the competitive trade. Maybe we don't have the skilled personnel or business-minded people to really compete with those who have the financial resources. We have very little funding.

DR. TROST:

Chief Snow, your submission was very powerful. It caught the interest of all of us, as you could have noticed by how silent we all were while you were speaking. It seemed to me that the intent of some of what you said was that life is changing on the reserves and that now, even though there are many levels of government, you would wish to work more closely with other Albertans and other Canadians in a general way. Am I correct?



CHIEF SNOW:

Yes. We are very much concerned with pollution - air pollution, water pollution, pollution of the environment. I think our Native people are great conservationists. One of our concerns is that when the land is unoccupied the real estate man is very uneasy, whereas an Indian would be very proud to look at that land in its natural beauty. This is the difference we have. We are concerned that certain areas should be wilderness areas.

In the treaties we were given the right to hunt. It's right in the statutes and in the treaties in documented form. Once in a while some of our people in government should look at that. I think they have put it aside and forgotten it. We're more than willing to cooperate and to work with society. I think in the past we've been downtrodden and condemned. But the time has come when we have to have an open mind, talk together and have arguments presented in the logical manner. I think these presentations by Indian people should be respected, read and considered before real changes are made.



301-1

A Brief on

LAND USE RESOURCE DEVELOPMENT  
IN THE EASTERN SLOPES OF ALBERTA

for

The Environment Conservation Authority  
Public Hearings held in Calgary, Alberta

June 18 - 20, 1973

Submitted by

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The timely occurrence of these Public Hearings on the important subject of Land Use and Resource Development in the Eastern Slopes is appreciated, and it is hoped that the overall input to these hearings will assist the Government of Alberta in developing prudent policies and practises relating to the Eastern Foothills.

However, because of the large area of land under consideration, its varied physiography and its diverse uses- past, present and projected- it is also hoped that further public hearings will be held on this land and its uses, and particularly before authorization of any major projects.

The subject of these Public Hearings involve a large number of issues and it is recognised that the resources of the Foothills are valuable to the Province of Alberta. As such, it is impractical to afford to all the Crown Land in the Eastern Foothills outside the National Parks the same protection that is provided for land inside the National Parks. On the other hand, it is unacceptable to dispose the resources of the Eastern Slopes in a manner that only considers the immediate economic return to the Province of Alberta( i.e. Albertans, their government and the Companies operating in Alberta.).

Here, the following sentiments expressed by the Canada Department of the Environment to Public Hearings conducted by the Environment Conservation Authority of Alberta in December 1971 are appropriate:

"Like clean water or clean air, environmental goods such as scenery, undisturbed open space and the presence of wildlife are public goods and should be jealously guarded and protected by Albertans and open to the enjoyment of everyone. Albertans must be careful which resources they give up or 'trade-off' to industry in return for benefits provided."

#### COMMENTS APPLICABLE TO ALL FIVE DRAINAGE BASINS

##### A. General:

Firstly, it may be appropriate to question some past policies and also some suggestions made in the reports made available prior to these hearings.

1. Information Bulletin, #2 remarks on page 21 that 'No single area within the study Zone has escaped petroleum exploration' and alluded to the entire forest area being criss-crossed with roads and trails, and bringing the destruction of large volumes of timber. Then-'Once exploration activities are complete, the industry moves into the development and refining field.'

As anyone can observe from the Forestry Trunk Road, much, but thankfully not all areas have been 'explored', and, of those explored areas, exploitation has not immediately followed. However, much disfiguration has taken place during some exploration and even while these hearings are in process, a new gas plant installation, attendant with new and upgrading of roads, is taking place ( for example, South West of Rocky Mountain House ).

Whilst recognising a need for oil and gas, exploration and exploitation conducted in a manner that does not have due regard for environmental considerations ( including watershed integrity and avoiding areas of unique scenic interest )- does not warrant continuation.

A.2. It is felt by many people that in the past ( and even the present ), Albertans have not gained as much as they could have from the giving up of their natural resources, either from economic returns ( including the promotion of secondary industry in Alberta ) or conservation of resources and preservation of the environment.

Such issues, including questions of Canadian ownership, should be given much more and serious consideration than they have been given in the past.

It is suggested then, that when large areas of Crown Land are being sought by companies for natural resource exploitation leases, the Public Interest in Public Land should be reflected in the lease agreements and should extend to adequate environmental protection, ( including the leasing company being totally responsible for any suits brought against it for pollution or despoilation ), satisfactory economic returns and royalties.

3. The sentiment expressed on page 33 of Bulletin #2 in "the production of renewable and non-renewable resources must somehow be accelerated to respond to the projected demands" is questionable. The term 'acceleration' is indicative of tending to increase of making quicker - and as such, a sure way to hasten the ultimate end of all natural resources. Projections are by no means absolute or authoritative ( witness the current "energy crisis" scare ). Moreover, such an attitude does not recognise the desirability of making better use of existing resources. It also ignores such questions as the destination of the resources and who is to gain by their extraction.

4. In the report 'The Resources of the Foothills- A Choice of Land Use Alternatives', many references to the citizens and Government of Alberta tend to give the impression that the Eastern Foothills of the Rockies is at their disposal.

In contrast to any such assumption, it must be recognised <sup>that</sup> ~~that~~ much of the River system flow into the Provinces of Saskatchewan and Manitoba has its headwaters in Alberta. As such, these eastern provinces have a vital interest in the quality and quantity of water leaving the Eastern Slopes of the Rockies and finding its way into the Saskatchewan river basin.

This interest was recognised in the Eastern Rockies Forest Conservation Act.

5. On pages 4-5 of Bulletin # 6, it is reported that the Eastern Rockies Forest Conservation Board has:

"adhered to the principle that watershed protection and improvement may be attained along with the utilization of the other resources, hence a policy of managing the conservation Area on a multiple - use basis has been accepted",

'and in 1964 the Board stat~~ed~~ as part of its policy that it would not promote or encourage recreational use of the Conservation Area and that such use would be restricted in large sections of the reserve'.

It would appear that each of these two policies conflict with each other in regard to recreational use. Apart from this conflict, it is contended that both policies are in URGENT need of review.

The policy regarding multiple use would appear to disregard the incompatibility of large extractive industries ( like the more recent strip mining for coal ) with high quality protection. That is to say, you can not have your cake and eat it too.

The policy regarding recreation would appear to be unduly restrictive, in view of the facts that activity confined to hiking is relatively harmless and tourist facilities that do not spoil their immediate environment can provide an on-going source of revenue, often exceeding returns to the Province from extraction of resources.

To conclude this section of general comment, it is strongly urged that all Crown Land be retained by the Crown.

Of the examples of possible strategies for development of the Foothills given on pages 30 - 32 of "The Resources of the Foothills - A Choice of Land Use Alternatives", a management strategy lying between A and C; say B, that modified would lie between prohibition of commercial use of resources, and, making use of all resources in an integrated manner, is recommended. Strategy D is contended to be deficient, partly because it does not recognize the 'downstream' interests of the provinces of Saskatchewan and Manitoba. Strategy E is strongly objected to.

In the more general context of utilization of resources, the following recommendations given by the Science Council of Canada in their Report No. 19, "National Resource Policy Issues in Canada" are commended to the Government of Alberta for favourable consideration:

7. "At an appropriate federal-provincial meeting, the Secretariat of the Canadian Council of Resource and Environment Ministers should be strengthened and renamed a National Resource Management Authority. The structure of the Authority should permit the concerns of all levels of government, industry, labour, professional organizations and citizens' action groups to be expressed and considered during analysis by the Authority of policy alternatives which are later to be considered by the CCREM (page 32). '
8. "This National Resource Management Authority should develop and coordinate long-range policies for integrated management of resources and the environment, and should be concerned with the development of policies for the prudent and efficient use of both renewable and non-renewable resources. These proposed policies and their background studies should be published and freely available to the public (page 32).
9. "Further, this National Resource Management Authority should increase support for programs to heighten public awareness, and encourage mechanisms for community involvement in decisions affecting resources and the environment (page 32).
11. "Federal and provincial agencies and the professional societies should encourage universities to broaden their undergraduate programs in the primary resource fields so as to develop graduates competent to enter resource and environmental management work. Particular attention should be given to attracting students from the social and behavioural sciences, economics and law (page 37).

12. "Federal and provincial granting councils and agencies should provide increased funding to expand and strengthen interdisciplinary research programs in the resource area, particularly those which include the social and economic problems of resource management. It is noted that commitment to a problem rather than to a discipline, add to teamwork and systems modelling rather than to publication, are ingredients which have shown success in building interdisciplinary groups (page 37).
13. "The search for more realistic measures of the environmental costs of resource exploitation and of the use and benefits of conservation in Canada should be intensified, as a matter of urgency (page 37).
16. "Canadians as individuals, and their governments, institutions and industries, should begin the transition from a consumer society preoccupied with resource exploitation to a conserver society engaged in more constructive endeavours. Ideally, Canada could provide the leadership necessary to work toward more equitable distribution of the benefits of natural resources to all mankind (page 39)."

#### B. Zoning

The concept of zoning Crown land is used by the Federal Government for both Banff and Jasper National parks. It would also appear to have been accepted by the previous Government of Alberta when it introduced three new wilderness areas and also introduced the concept of a Restricted Development Area in its Department of the Environment Act (both given assent in April 1971). The merits of zoning would also appear to be approved by the present Government of Alberta as evidenced by its introduction of 'controlled buffer zones' around wilderness areas and by its comment on the Village Lake Louise proposal (see Appendix) where a three level zoning scheme was advocated for the National Parks.

The merits of a zoning scheme could lead to a better understanding by both the Government and the public as to what areas would be regarded as worthy of preservation and also, what areas are potentially suitable for development. Drafting of a zoning scheme for the Crown land lying in the Eastern slopes could be guided by

- i) existing land utilization;
- ii) presently gazetted wilderness areas and restricted development areas;
- iii) immediate proposals for future development, resource extraction, tourist resorts and new wilderness areas; and
- iv) the Foothills Resources Allocation Study.

As a suggestion, the following three-tiered zoning system for Crown Land in the foothills is submitted for consideration, improvement and, subsequent to further public hearings, implementation.



a) Non-Development Areas (or Conservation Areas)

These would be designated as areas in which resource extraction and timber milling would be prohibited by regulation or Law, and only non facility-orientated recreation would be permitted (e.g., travel by foot, horse in summer and snowshoes or cross country skis in winter, fishing but no large tourist resorts, snowmobiles or hunting). Such land should not be leased or otherwise granted, and existing leases and permits be allowed to expire or be withdrawn.

Watershed and wildlife protection would thus be ensured.

Suitable such areas would include Wilderness Areas and the Controlled Buffer Zones, suggested as watershed areas (for example, those identified on page 14, Figure 6 of Bulletin #7) and Provincial Parks.

Areas proposed by the Alberta Wilderness Association as wilderness areas that would not be used for hunting could also be classified as a Non-Development Area. It is also suggested that land not presently being utilized within ten miles of the boundaries of Waterton, Banff and Jasper National Parks be given the status of such a Non-Development Area.

For all Non-Development Zones, Land Management Strategy A (as outlined in the report "The Resources of the Foothills - A Choice of Land Use Alternatives") would be appropriate.

b) Restricted Development Zones

Such areas of Crown Land where limited extraction of renewable resources, timber milling, grazing, tourist facilities would be reasonable could well form the larger part of Eastern Foothills Crown Land and be established, by Regulation, as Restricted Development Areas as specified in the Department of the Environment Act.

Here, the application of Land Management Strategy B if modified to allow limited resource extraction, could be appropriate.

c) Development Zones

The areas of Crown Land in the Foothills in which extraction of renewable and non-renewable resources (including the presence of oil and gas plants and strip mines and higher density population centres or large tourist resorts) would be allowed under permit or lease.

Land Management Strategy C could be appropriate for such zones.

It is emphasized that a zoning scheme should be introduced and the simple one described is only an example.

After a zoning scheme has been drawn up by the Government, and Crown Land in the Foothills classified, it is recommended that the scheme be then made subject to further public hearings before authorization. Moreover, no leases or permits for substantial resource extraction, major road improvements or approval of large tourist resort proposals should be granted until such a scheme is authorized.

### C. Proposals for Tourism and Recreation

Although comment will be given in later sections on some of the specific major resort proposals listed in Bulletin #4, some comment pertaining to all proposals affecting Crown land in the five drainage basins is given here.

Firstly, the proposals of the Alberta Wilderness Association for eleven Recreational Wilderness Areas are, in general, highly commendable and desirable. At least one Recreational Wilderness Area is proposed for each of the five drainage basins and the areas range in size from 38 square miles (Folding Mountain - Athabasca Basin) to 1784 square miles (Willmore - Smoky River Basin). Each of the proposals appears to be based on sound research efforts. The areas of land suggested, within the total study area, are areas of little or no conflict with: existing coal mining; land already explored for oil and gas; timber milling; and grazing. As well, the areas identified in the proposals include sub-alpine and alpine regions and also include land preferred by ungulates.

Should the proposed areas be given statutory protection, much watershed integrity would be ensured, and the Province of Alberta would have identifiable areas of land for conservation and recreation purposes.

It is noted that in some of the areas proposed, land is being presently leased or otherwise granted for exploration or exploitation of coal, oil or gas. Also, timber and grazing permits have been granted. In view of the relatively small area of the proposed recreational wilderness areas (10 to 15 percent of the total study area) and that the proposed recreational areas do not fall in the areas of maximum resource productivity, it is suggested that:

existing leases and permits that expire in the next year be not renewed, and

other leases and permits be terminated with compensation to present holders who would be adversely affected, possibly in the form of exchanges of leases for areas outside the proposed wilderness recreational areas.

This endorsement of the proposals of the Alberta Wilderness Association does not necessarily extend to allowing hunting and it is suggested that, if Recreational Wilderness Areas are established, hunting should be prohibited in those areas adjoining the National Parks and that the land available to hunting be restricted in the remaining such areas.

With regard to recreation assisted by mechanical devices (e.g., snowmobiles, trail bikes, etc and you name it in another ten years time), it is hoped that as well as Recreational Wilderness Areas being established, such activities will be severely limited but not entirely excluded. Possibly, the smaller areas would only allow non-mechanized recreation, and the large Elbow-Sheep area could contain limited areas that would permit certain mechanized recreation activities restricted to appropriate seasons and by responsible persons.

It is recommended that statutory protection for the proposed Recreational Wilderness Areas be given but that the present provisions of the Wilderness Areas Act may be too strict. As an interim measure, it is recommended that these proposed areas be now set aside, and that they be favourable reviewed for inclusion into a non-development zone and legislation be enacted to ensure their protection.

For the remaining major Tourism and Recreational proposals affecting Crown Land in the Eastern slopes, the following guidelines are offered and suggested as being particularly appropriate where the estimated cost of the proposal exceeds \$250,000 :

- a) the promoter be able to guarantee that the proposed resort will be owned and operated by Canadians and that sufficient finance will be forthcoming from Canada for construction of the resort;
- b) the total costs of services and road access supplied by the Government or any public corporation will be borne entirely by the developing company;
- c) sewage and garbage disposal should be the sole responsibility of the operating company, and subject to the specific approval and operating standards of the Government;
- d) some return be provided to the taxpayer in addition to Company profits in the form of a reasonable and realistic rent for the land and a minimum percentage of the profits;
- e) adequate assurance be given that recreation and accommodation facilities will be made available for Canadian and Alberta families at all income levels;
- f) larger proposals not be approved until the promoters have given specific details as to the number of residents and visitors that would be catered for, and that these details, along with sound environmental impact statements, be made subject to further public hearings;
- g) that no larger proposal be approved if it is likely to adversely affect flora and fauna or would conflict with any worthwhile zoning scheme that could be adopted;
- h) where it is apparent that there is presently insufficient information to grant approval to any proposal, the proposal not be approved now and no future commitments be made except as give due regard to the Company whose proposal was received prior to these hearings, and whose subsequent proposal is acceptable on economic, social and environmental grounds.

Part of the rationale for these guidelines lies in the fact that where proposals affect Crown Land, the citizens of Alberta, as taxpayers and de facto owners, are entitled to consideration of their interests. If these or similar guidelines are considered too stringent in relation to policies relating to leases and permits for the exploration and extraction of resources in the Foothills, it is suggested that the current policies be revised so as to give more consideration to the public. Here, it may be noted that resource extraction industries tend to be capital intensive rather than labour intensive.

Guideline e) relating to availability of facilities to all income groups stands on its own merits and was advocated by the Government of Alberta in May 1972, when commenting on the proposed Village Lake Louise (see Appendix).

Other guidelines are particularly relevant where the Company offering to develop the larger facilities has not, as is the case with many of the proposals, specified the numbers of visitors and residents to be accommodated in the proposed resort.

Where proposals would necessitate a sizable number of permanent residents to assist in the operation of the resort, it should be recognized that it could be difficult, if not impossible, to ensure that the resident population would remain static. After one generation, children who have grown up in or around the resort could not be directed to leave it. Problems such as education and medical facilities, along with local government for the residents are important to any community of people, and should be carefully considered before any approval is given to the larger tourist resort proposals.

Bulletin #4 lists under 'major proposals', proposals by the Alberta Youth Hostels Council for a chain of 13 new Youth Hostels to be situated throughout the five River Basins. In addition to these listed in Bulletin #4 the Alberta Youth Hostels Council in their "Proposals for Education and Recreation" allude to their present Youth Hostel at Ribbon Creek, propose a Youth Hostel at Kananaskis Lakes (both in the Bow River Basin) and also propose that a total of 17 hostel locations (in the North Saskatchewan, Athabasca and Smoky River Basins) be dedicated for later hostel development.

All of these proposals by the Alberta Youth Hostels Council are highly commended, and it is recommended that sites be leased on reasonable terms to the Council. Reasons for strong endorsement of these proposals include:- the nature and location of the proposed permanent Youth Hostels and the record and experience of the organization in providing simple low cost accommodation in its present Youth Hostels to members, non members and community Youth Groups.

For all of the 'other proposals' listed in Bulletin #4, it is suggested that each proposal be examined on its merits. Where any proposal is appropriate on the grounds of social, economic, environmental considerations, and benefits to Albertans, approval be given forthwith and the sites leased on reasonable terms.

## COMMENT APPLICABLE TO THE BOW RIVER BASIN

In addition to comments made earlier for the five drainage basins, the following views and opinions are offered on the 'Assiniboia' Proposal and the Kananaskis highway.

A. The 'Assiniboia' Proposal

The concept of a year-round mountain community on Spray Lake is an interesting one.

A capital investment of 10 to 15 million dollars is envisaged, an estimated 800 jobs provided in a first stage, and Bulletin #4 alludes to a site of 7,000 acres. However, the proposal does not appear to specify the number of accommodation units that would be provided.

As a concept with large scope, the guidelines given earlier for large tourist resorts are suggested as being appropriate. In particular, before any approval is given for such a resort, it is recommended that before any approval is given, more specific details be given, an independent environmental impact assessment be made, and both brought before new Public Hearings.

Other reservations held by the author include the size of the site envisaged, and it is suggested that a lease of 200 acres in which to site the buildings would be more appropriate than leasing 7,000 acres. The proximity of the location to Banff National Park is not a point in the concept's favour. The plan to allow snowmobiling in winter on Spray Lake, and around the proposed resort is criticized, if for no other reason than the probable conflict with the down-hill and cross-country skiing activities planned for.

As well, the philosophy outlined by the promoters - "We believe that it is possible to arrest continuing environmental damage by intensive development of a small core area, and by banning development over the remaining lands", is not easily acceptable to all people, particularly when combined with the suggestion that for a resort to be economically viable, adequate facilities for enough people must be provided. (Recall the Village Lake Louise Issue of 1972 that was not exclusively concerned with the fact that the development was slated for a National Park.)

B. Kananaskis Highway

It is evident that the action of the Department of Highways and Transportation in the Kananaskis Valley since September 1971 have met with considerable public criticism. Yet, even amongst the dissenting voices, there are few who would object to moderate upgrading, and then paving, of the old road.



As well, a related cause of concern to many people has been the apparent large authority of the present Minister of Highways and Transportation.

It is regretful, at least to the author, that design standards and route locations for future Forestry Trunk Road upgrading were not explicitly made subject to these Public Hearings, with relevant details being provided beforehand.

However, a 22-page document entitled "Environmental Impact Statement for Provincial Highway No. 40" (Alberta Department of the Environment) was recently released. The subject matter related to 31 miles of road in the Kananaskis Valley (out of a total of 700 miles of road).

An examination of this short document reveals at least one contradiction: that on page 14 where "A strip approximately 114 to 164 feet wide along the 30-mile right of way will be disturbed" (36 feet will be paved) and, later, " .... The width of the strip therefore should be kept to a minimum". The statement with regard to location that "every attempt was made to adhere as close as possible to the existing (right of way)" lacks credibility.

It is submitted that as an environmental impact statement, this document is somewhat deficient. It is requested that the Kananaskis Highway and Recreation Study by Lombard North Planning Limited be made available to the Public.

The report places much emphasis on alleged social and economic benefits. Little or no discussion is given on what might be reasonable alignment and design speeds for the road.

As well, it is strongly urged that before any more road construction takes place (aside from the 12 miles to Ribbon Creek) that the Minister of Highways and Transportation make proposals, accompanied by sound environmental impact assessment studies, subject to Public Hearings.

#### NORTH SASKATCHEWAN RIVER BASIN

In addition to comments made earlier for the five drainage basins, a reservation is expressed about the 60 square mile, all-year round commercial major proposal south of the Ya-Ha Tinda Ranch, and, the hypothetical example given on pages 20-22 of Bulletin #7 .

These two areas appear to overlap and both are adjacent to Banff National Park. In earlier times, these areas did form part of Banff National Park..

Any proposal to open another strip mine in an area formerly included inside a National Park and now just outside a National Park boundary must be greeted with dismay. As well, why encourage tourist development or a new town in a presently isolated area adjacent to a National Park? Instead, it is suggested that less remote areas be sought for development, and the area just east of Banff National Park and south of the Red Deer River be placed in a non-development zone so as to serve as a buffer to the National Park (perhaps even transferred to the National Park) and/or granted as a Recreational Wilderness Area. Whatever happens, this area should be a Restricted Development Area.

#### EPILOGUE

Whilst these hearings are in process, the author understands that the Energy Resources Conservation Board is, in a Calgary Courthouse on June 19, 1973, conducting hearings on the important subject of Current and Future Impact of the Alberta Coal Industry on the economy of the Province.

It is the hope of the author of this brief that such clashes in timing will not occur again, and, that many of the important issues raised in these Public Hearings on the Eastern Slopes will be made subject to further public hearings by the Government of Alberta.



## APPENDIX

Partial contents of a letter from The Honourable Don R. Getty, Minister of Federal and Intergovernmental Affairs, Government of Alberta to The Honourable Jean Chretien, Minister of Indian Affairs and Northern Development, Government of Canada respecting a proposal for Village Lake Louise in Banff National Park as extracted from Alberta Hansard, May 29, 1972:

"It has also become obvious that any large project of the nature of Village Lake Louise Limited should only be considered after the National Parks have been zoned using the following proposed guidelines:

1. Non-development zones - which should involve the majority of the Park area and where no development should be allowed of any type.
2. Partial development zones - involving most of the balance of the Park, where development would be restricted to facilities such as roads and riding and hiking trails - the purpose of this zone would be to make it possible for the citizens to enjoy the Parks in their natural state.
3. Development or recreation zones - begin a small percentage of the Park which would allow recreation and accommodation facilities for Canadians and visitors so that these people could enjoy the mountain areas of Alberta which lie primarily within National Parks. These developments would include appropriate sports such as skiing in the winter and golf in the summer with the facilities capable of meeting the requirements of average income earners.

We are prepared now to enter into discussions with your government to work out a logical Park zoning plan, which we believe is essential before any alternatives to Village Lake Louise are proposed. We do not think it is fair to developers to encourage their interest until acceptance of such zones has occurred and been fully communicated to the public. We are convinced that when this zoning and the necessary ecological studies have been finalized, our two governments can readily develop acceptable alternatives to meet the needs of our citizens."

"In summary, the Alberta Government is not at this time prepared to support the specific proposal of Village Lake Louise Limited - despite some obvious advantages - for the following reasons:

1. Such a project could only be authorized after adequate environmental studies have been undertaken - and such is not now the case with the Village Lake Louise proposal.
2. Specific major development projects such as this should occur only after the Park areas have been properly zoned to assure protection of the original objectives of the National Parks.
3. This specific project appears to be too large in scope and could tend to create an undue concentration of visitors and employees in one part of the Park.

4. This specific project fails to assure recreation and accommodation facilities for Canadian and Alberta families at all income levels.
5. Problems facing Banff and Jasper residents remain unsolved and creating another large townsite will only add to these problems."

ADDENDUM: to Brief submitted June 18, 1973 by P.G. Laird

It is further recommended to the Environment Conservation Authority that

- a) a need for more consultation between the Government of Alberta and the Parks Branch of the Department of Indian and Northern Affairs be recognized;
- b) some emergency shelters, with stoves, be placed at several locations in the Eastern Slopes (this idea was suggested by one speaker);
- c) some primitive shelters, with stoves, be provided in some remote areas, for the use of hikers, etc;
- d) the provisions of the recently enacted Land Bill introduced by the Honourable Mr. Yurko be now implemented by Cabinet;
- e) the coal lease on the Highwood Pass area not be confirmed for the present, and that actual and reasonable exploration costs be allowed to the present holder of an exploration permit (reasons for this include the high altitude of the area and it being at the source of the Kananaskis and Highwood river systems);
- f) the Elbow-Sheep Recreational Wilderness Area proposed by the Alberta Wilderness Society not only be adopted with any appropriate modifications, but, also that, part of the present dry weather loop road located in the head waters of the Elbow and Sheep rivers be closed.

It is suggested that a complete loop road within such an area is not appropriate. However, some limited road access along the present roads (for example, a few miles west of the Elbow-Jumping Pound road) may well be in order.

In this matter of loop roads, the Calgary Chamber of Commerce in a brief to the April 1971 Public Hearings conducted by the Federal Government to review the Provisional Master Plans for the Rocky Mountain National Parks saw fit to describe the idea of the Cascade-Pipestone loop road as a 'classic miscreant' and 'an asphalt intrusion for people to hustle themselves around'.

Moreover, there presently exist two 'loop roads' from Calgary that are on the boundaries of the proposed Elbow-Sheep recreational Wilderness Area: namely the Elbow-Jumping Pound secondary forestry road and the Kananaskis-Highwood forestry road.

## QUESTIONING BY THE AUTHORITY

MR. DOWLING:

In your presentation, Mr. Laird, you mentioned Village Lake Louise, which I know had a great reception here in Calgary. Now I'm not sure that I understood you correctly. Did you say that whereas it would not be a good thing for Banff National Park, it might be a good thing outside the park?

MR. LAIRD:

No sir. My position on that was rather to look at what the Alberta government said in May, 1972. The Alberta government commented on the proposal and found certain things wanting. So, if you like, I'm suggesting in a blunt way that some of the criteria that the Alberta government used in evaluating the Village Lake Louise proposal might be used by the same government for evaluating proposals on Crown land under its jurisdiction.

THE BIOGEOGRAPHIC IMPORTANCE OF THE EASTERN SLOPES  
OF THE ROCKY MOUNTAINS OF SOUTHWESTERN ALBERTA

(with some distributional case histories in explanation)

A brief on the biological significance of the  
Alberta foothills, submitted to the Public  
Hearings on Land Use and Resource Development  
in the Eastern Slopes, Calgary, June 18-20, 1973

Prepared by:

M.T. Myers

"The region is varied and complex....  
It is very much to be hoped that  
this variety and complexity will be  
adequately revealed during the  
course of the public hearings."

E.C.A. Information Bulletin No. 12

## INTRODUCTION

As professional ecologists, we wish to concentrate on one aspect primarily of the proper future management of the Eastern Slopes of the Rocky Mountains of Alberta, namely the fact that because of their geographical position they harbour a flora and fauna of almost unique interest to biological scientists, naturalists, educators and those members of the public that are aware of their special characteristics. The region of the Eastern Slopes in which this aspect is most critical extends from the vicinity of the International Boundary northwards to the vicinity of the Ya-Ha-Tinda Ranch. We consider that this flora and fauna should be recognized by the Government of Alberta as part of the natural, indeed cultural, heritage of the province and safeguarded accordingly for posterity. It is our hope that, by means of the text and attached illustrations of this brief, we can bring this point of view forcibly to the attention of those whose responsibility it is to provide such safeguards.

Briefly, the climatic history of the Eastern Slopes during the last 15,000 years has resulted in southwestern Alberta being the stage for an ecological drama that is still being acted out in the evolution and ever-adapting ecology of a significant proportion of the total plant and animal species with which the province is endowed. Unfortunately, few concrete examples of this play of population advances and competition for available space among various groups of species are known, so that the ones we have been able to select for the purposes of illustration are only a small sampling of the possible patterns of distribution and ecological strategies that have developed here. Our concern is to make as clear as we can in this public forum our conclusion that unplanned or drastic continued physical alteration of the terrestrial environment along the Eastern Slope foothills of the Rocky Mountains is scientifically undesirable if it unknowingly eliminates plants that have distributions there that have not yet been mapped (as is the case for most herbaceous species) when the extent of, and reasons for, their limited or restricted ranges is not yet known. It is

iranic that at present our knowledge of such distributions appears to be less complete than it is for the distribution of Canadian arctic and alpine plants. We therefore recommend that the Department of Lands and Forests should commission competent investigators in the near future to map the distribution of these plants along the length of the Eastern Slopes in great detail, or that they collaborate with non-government plant taxonomists in doing this job themselves.

#### SINCE THE ICE RETREATED

In this city of geologists it is not necessary to go into details, but a few words must be said about the climatic history of this area during the last 15,000 years since it is this which has determined the ecological changes that have taken place on the Eastern Slopes. In the not too distant past, this region of the prairies, the foothills and the Rocky Mountains was overlain by two great ice-sheets - the Cordilleran to the west, of which the last unmelted remnants survive today as icefields that may be seen atop the mountain crests west of the Jasper-Banff Highway, and the great Keewatin ice-sheet that flowed towards the Rocky Mountains from a centre far to the northeast in the direction of the Canadian Shield. These two ice-sheets met and even joined right here in western Alberta. During the period from 15,000 years B.P. to 13,000 years B.P. these ice-sheets became thinner and their margins (distant from Edmonton and Calgary at first) began to retreat. Ever since the interglacial period (in which we now live in Alberta) began, plants and animals have been gradually moving, successively, towards and into this region as conditions ameliorated, just as they are still doing in the Canadian arctic today, as is well known. What is less well known is that there are still plant and animal species advancing into Alberta today towards the central sector of the Canadian Rockies where the two great ice-sheets last touched. The ice has long-since gone perhaps, but the consequences of its disappearance are still in progress and, without awareness of this, no one is fully qualified to modify the environment drastically because of the damage he may irreparably do in his ignorance. We no longer tolerate vandalism at archaeological sites; we will no longer tolerate it in unique communities of plants or animals either. The problem is that the latter are the harder to map, or have been until very recently. Yet both are cultural resources that must be protected by common sense and responsibility among public servants.



### DISTRIBUTION PATTERNS

The most familiar example of what we are describing is the occurrence of certain species of fishes in certain river systems and not in others. Examination of the maps in The Fishes of Alberta (Paetz and Nelson, 1970) shows that some fishes occur in the Peace River drainage but not the Athabasca River (Fig. 1), some in the Saskatchewan River watershed but not in the Peace or Athabasca Rivers (Fig. 2), some in all the major Alberta river systems except the Milk River of the upper Missouri system (Fig. 3) and some in the Milk River but not the Waterton, Oldman or Bow Rivers (Fig. 4). To fishermen, such differences in distribution may or may not be of particular interest, but they are easy to understand. They are of concern to some when it is inevitable that the invasion of coarse fish into a headwater system from which they have previously been absent may alter the quality of the fishing as well as the ecology of the invaded streams. Water diversions of the type that were suggested by the PRIME proposals would have irrevocably altered the diversity of Alberta's fish ecology and thereby reduced its value. Likewise, physical damage to stream beds and banks from whatever industrial, constructional or recreational activities of supposed benefit to Albertans cannot but alter, degrade and simplify the environment for the food organisms of river fishes and so reduce the interest of the fish communities of Alberta's headwater streams in the Eastern Slopes for sportsmen, naturalists and scientists alike (no one usually bothers to estimate the detrimental costs of a project to which the word "development" can be attached). So much for our fish "appetizer", on which others will address these public hearings at greater length and with greater knowledge.

We have already indicated that little is known about the precise local distribution patterns of species in the flora of the Eastern Slopes (other than the small number of commercial timber trees), and we have already stated what we believe must be the responsibility of the Department of Lands and Forests before any major developments are initiated in the Eastern Slopes following these hearings. Nevertheless, a few pointers must be included. Knijt (1973) has recently added 10 species to the known roster of Alberta's higher plants (albeit from within the confines of a national park -- Waterton Lakes N.P.) and there is every likelihood that some of these occur elsewhere in the near vicinity -- one species is already also known to occur in the Castle River area. For much of the length of the Alberta - British Columbia border

the Government of Alberta can, of course, disclaim any interest in the flora of the higher elevations because they occur inside national parks, but in the sector from the north boundary of Waterton Lakes N.P. to the south border of Banff N.P. this cannot be so, and it is precisely in this sector that the flora and fauna of the Eastern Slopes is of special interest all the way to the Continental Divide and boundary of British Columbia. The zone north of Waterton Lakes N.P. is a natural boundary zone in the Alberta distributions of several plants. For example, among junipers, Juniperus scopulorum reaches its northern limit in the vicinity of Crowsnest Pass where a zone of intergradation begins with J. horizontalis. Again, the alpine hawkbeard, Crepis nana, exists in two subspecies which have overlapping distributions only in the sector from Pincher Creek south to the International Boundary. Further north, in the North Saskatchewan River valley we find the northern limit of limber pine, Pinus flexilis.

Kuijt (1975) points out the astonishing fact that 55% of the species of higher plants on the Alberta list are to be found in the quite limited area of Waterton Lakes National Park, a dramatic illustration of the extreme scientific, educational and recreational importance of the Eastern Slopes in and north of that park in the extreme S.W. corner of the province. As we shall see, this richness is not confined to plants. Furthermore the width of the foothills zone in this sector is extremely narrow, with the prairie grasslands almost reaching to the mountain wall. What is so significant about the decisions that must be made following these public hearings is that they must incorporate a clear recognition that many species of both plants and animals occur in Alberta only in a very narrow belt a few miles wide, from Waterton Lakes National Park northwards past the Elbow River headwaters and the Ghost River to Ya-Ha-Tinda and beyond. Because the great ice-sheets were melting back from both the south and from the north there are many species of plants and animals of which populations have arrived, or are just now arriving, in this area along the narrow Eastern Slopes forested corridor from two directions simultaneously. Both butterflies and birds provide examples as fascinating as those suggested by the few plants for which the exact range limits are yet known, as we shall see.

Herbaceous plants are food plants for butterflies, moths and other interesting insects. Unfortunately, there is as yet no easily comprehensible publication on the distribution of most groups of Alberta insects. Much research on these is desperately needed before the information needed for a full "Domesday Survey" of Alberta's invertebrate fauna can be assembled before it

is too late. A "Butterflies of Alberta" (by John and Alan Legge and C.D. Bird) is being planned, but like an atlas of the herbaceous plants, will not be ready for some time. It will suffice to mention one or two examples of the processes that are occurring. The orange sulphur butterfly, Colias meadi, occurs as far north as Yamnuska (just north of the Trans-Canada Highway) while C. hecla, advancing into Alberta from a pleistocene refugium in the Yukon and Alaska as yet extends south only as far as Nordegg, so that these two populations have not yet come into contact after their long glacial separation and isolation. Again, the swallowtailed butterfly, Papilio zelicon, occurs in southern Alberta. P. machaon has entered Alberta from the northwest, and specimens have been collected on the Eastern Slopes of the Rocky Mountains that exhibit characteristics of both species. In the Atlantis fritillary, Speyeria atlantis, this process of introgression is at a more advanced stage with three subspecies now engaged in a "melting pot" of gene exchange along the entire Eastern Slopes. Another species in the same genus, Speyeria cybele late, is limited to river valleys, and this can serve as an example to remind us that the survival of many plants and animals cannot be guaranteed (as they must be) if human modification of river valley landscapes is not controlled, and the ecological consequences of particular modifications investigated in advance.

One study of particular scientific interest that is required is to establish the extent of the correlation between the distribution of the Alberta butterflies and moths and the distribution of the food plants of their larvae. What is the time-lag between the establishment of the plant and the corresponding animal in an area? One example (albeit with several special features because the food plant is a parasite on a tree) is that of an elfin butterfly, Callophrys spinatorum, the northern limit of which is the Bow River, but the food plant of its caterpillar is the dwarf mistletoe parasitic on lodgepole pine which occurs far to the north and east of the Bow River.

Also deserving of study is the competition for space that occurs as species arrive in the same area from two different directions; this should be more complex and intense than in the arctic, where colonization is also in

progress, because of the much larger fauna here in western Alberta.

Parallel with the post-glacially-determined distribution of the butterflies just described, and more easily illustrated in this brief because of the published works of Wallis (1961), Freitag (1965) and the almost completed study of D.J. Larson (1973), is the distribution of some Alberta beetles. Larson has found that the Castle River watershed (mentioned earlier) is unique: 5% of the ca. 140 species of the beetle family Dytiscidae that occur in Alberta are species that occur east of the Continental Divide only in this area in the extreme southwestern corner of the province (Fig. 5, cf. also Fig. 6). In another example, a water beetle that has invaded west-central Alberta from British Columbia hybridizes with an eastern counterpart at the limits of its range there, probably because of a scarcity of its preferred habitat, whereas it does not do so in the southern part of the Eastern Slopes of southwestern Alberta where the two species co-exist while ecologically isolated (Fig. 7). In another family of beetles, the Cicindelidae, examples of hybridizations between formerly-separated populations of different species are illustrated in Figs. 8 & 9, and result from only partial differentiation during the period of the last glaciation. Fig. 8 is a case of particular interest from the viewpoint of these public hearings: the Bighorn Dam in the Kootenai Plains is (or has) flooded the only locality in this province where a subspecies of tiger beetle otherwise found only west of the Rocky Mountains had penetrated into Alberta. This and previous examples suggest that faunistic and floristic surveys are most urgent on the Alberta side of the lowest passes in the Continental Divide, particularly where the low elevation of the pass eliminates, or greatly reduces the width of, a zone of habitat that otherwise separates zones of suitable habitat for species that occur on the western side of the Continental Divide.

Many species of amphibians and reptiles reach their northern limits of distribution in southern or coastal British Columbia, but fewer do so along the Eastern Slopes of Alberta. Three amphibians can be mentioned: Long-toed Salamander (with a very localized and discontinuous distribution), Western Toad and Spotted Frog.

Birds and mammals provide numerous examples of species that occur in Alberta only in the narrow Eastern Slopes zone of the Rocky Mountains. Why these mobile animals have penetrated across the Continental Divide and no farther east than the foothills (particularly in the northern sector) is not known to us. This distribution is illustrated for some 37 species (and a further 18 distinct



subspecies in the case of mammals) in Fig. 10 ; the reader is referred to the detailed caption for this figure for the full extent of this phenomenon.

Among the mammals, several species have developed subspecifically-distinct populations resident in different sectors of the Eastern Slopes. In the caption for Fig. 10, three races of pika and two each of the hoary marmot and yellow pine chipmunk are mentioned as well as some 18 other species that also occur farther east and northeast across the less elevated remainder of the province, but have distinctive populations (subspecies) in the Rocky Mountains and their Eastern Slopes. Altogether, therefore, there are not fewer than 31 mammalian forms found only in Alberta along its western borders. The ecological and evolutionary events that are taking place at the boundaries between supposedly-differentiated forms of the same species call for detailed study, and certainly parallel the genetic interactions already mentioned as occurring among some Eastern Slopes butterfly populations.

On the Eastern Slopes the distribution of the meadow vole becomes highly discontinuous where it overlaps with the Richardson's vole and the long-tailed vole, and there becomes confined to (for it) marginal habitats such as bogs and alpine meadows. This example illustrates the effects of competition of related forms upon the ecology of one of them when it is forced into close proximity with either a more successful one expanding its range, or into narrow strips of its most-favoured habitat in a dissected mountainous environment.

The best-known example of hybridization among birds in southwestern Alberta is that between the Yellow-shafted (eastern) and Red-shafted (western) Flickers. In the foothills west of Calgary the overlap between these two forms is such that most individuals exhibit some characteristics of each type; indeed they are now treated as one species. Figures 11 - 14 show the distributions of two pairs of warblers (one western and one eastern in each case) which are now in contact with each other at the edge of their breeding range in southwestern Alberta. Like some of the earlier examples from other groups, they show incomplete reproductive isolation despite their acquisition of distinctive morphological characteristics during several thousands of years when their breeding populations were widely separated geographically. The evolution of the wood warblers (Family Parulidae) in North America during the several glaciations of the Pleistocene is a topic of special interest, explained by Mangel (1964). Several species of bird are moving southwest from the boreal forest zone of Alberta (Fig. 15) towards, into and along the narrow corridor of similar habitat that is found in the Eastern Slopes

foothills of the Rocky Mountains, from the region of Rocky Mountain House towards Saebe and Turner Valley (one such species is the Ring-necked Duck).

Each year one of us (M.T.M.) receives letters from Americans and Canadians who plan to visit Alberta (or is phoned by them when they have already arrived here) for information on where to find certain species of birds not previously seen by them in eastern North America. The most popular of these species are Blue Grouse, White-tailed Ptarmigan and some of the birds of prey such as the Osprey and Golden Eagle that are now extinct or approaching extinction in more densely-populated states or provinces. This phenomenon is one that bears on the interest of Alberta for tourists.

Finally, it is worth noting that west of the Continental Divide opposite Castle River and Waterton Lakes N.P. the valley is that of the Flathead River, which flows southwards directly into the United States for some distance without connections with any other British Columbian watershed. For plants and invertebrate animal species particularly, it probably acts as a corridor leading towards Alberta for southern species that enter Alberta only (or first of all) in that remote southwestern corner of the province. As in the case of the Peace River in the north<sup>and</sup> Howse Pass and the Kootenai Plains in the central sector of the Eastern Slopes, the passes in southwestern Alberta are fairly low, which facilitates the penetration just suggested.

#### DRAWING THE THREADS TOGETHER

To non-scientists all of the examples given above may appear trivial, and quite irrelevant to questions of citizens' recreational aspirations or the hard-cash world of business men and workers trying to make a living. But someone must reply, as we do here. Its geographical location extends from 49°N. to 60°N. across the prairie grassland/aspen parkland/boreal forest and subalpine zones east of that great biogeographical barrier of the world-renowned Rocky Mountains. Alberta is recognized by scientists far beyond our own provincial and national borders as having a special significance as a place where the aftermath of the ice-age is still visible in a drama of advancing and competing (and sometime hybridizing) populations of animals and plants -- an ecological and evolutionary laboratory of great importance. The fact is that the Eastern Slopes are of great interest to scientists working on problems of evolution, taxonomy and species ecology. It matters that during the next 25-50 years ( a short period of biological time) we should not disfigure, not only the landscape of the Eastern Slopes, but also the ability of its plant and animal inhabitants to continue to live there in the rather fixed manner that the rather slow processes of organic evolution have developed for

each particular species. Only a few of them can adapt to rapidly-altering conditions as quickly as man can. Consequently, unless we quickly find out just what species are there, where exactly they occur and how they are able to survive under conditions that we wish to impose in place of their present environment, we shall inevitably destroy the majority of them. The myopia of the usual approach to this problem is perhaps illustrated by hazarding a guess that there are several thousand different species living on the Eastern Slopes of the Rocky Mountains of Alberta - which is quite a different order of magnitude from the view that we need only concern ourselves with sport fish, some big game and upland game and a range of waterfowl - which are not very abundant in this area anyway. Nor is it enough to believe that most of these several thousand species do not matter or that they matter to only a few people: both are false.

#### RECOMMENDATIONS

In the foregoing, several concrete suggestions have been made for a full inventory at an early date on behalf of Albertans to establish exactly what the distribution of the plant and animal species living on the Eastern Slopes is for each - effectively an atlas project in fine detail (which is now possible with the combination of satellite, aerial and ground surveys). Since this region is what it is because of its highly varied topography, no planning decisions that are free of destructive and unknown side effects should be contemplated until the distributions of the species composing the flora and fauna are known. Many of them exist as small isolated populations or "islands" of favourable habitat, surrounded by a sea of habitat unsuitable for them while being suitable for other species. We believe that the localities having the greatest diversity of species must be identified and a sufficient number of them set aside as Ecological Reserves (some quite small perhaps, others the size of a watershed). These reserves should be protected from over-exploitation by loggers, strip-mining or destructive recreational practices. At the same time we recommend that it be a required practice that roadside spraying throughout the Eastern Slopes of Alberta must be justified on every occasion that it is proposed.

The general economic uses to which the Eastern Slopes are to be put are not contradicted by what we propose, if our thesis is carefully examined. Clearly industrial and recreational uses need to be better planned than in the past, in view of the greater sophistication that this society now has in recogni-



izing the processes of nature and the ecological and cultural depreciation that uncontrolled exploitation sows as a harvest for our descendants. We believe that broad-scale destruction must not be permitted to occur, that the Forest Reserves should continue to be managed very largely as Forest Reserves producing a renewable resource without <sup>needless</sup> clear-cutting and with replanting with species native to any logged area. In particular, the narrowest zone of the Eastern Slopes requires the earliest attention. This sector extends from the International Boundary and Continental Divide in the region of Waterton Lakes National Park north to at least the latitude of the Ya-Ha-Tinda Ranch.

June 16, 1973

*Timothy Myres.*  
*Alan A. Legge*

#### Acknowledgements

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#### Biographical

M.T. Myres is an Associate Professor in the Department of Biology, University of Calgary. In 1970/71 he was the first President of the Federation of Alberta Naturalists. He is currently a National Director of the Canadian Nature Federation and Chairman of its International Liaison Committee. His special field is Ornithology.

A.H. Legge is a Senior Research Associate at the Environmental Sciences Centre (Kananaskis), University of Calgary. His speciality is the population genetics and evolution of plants in alpine and arctic environments. He is a co-author of a projected book on the distribution and evolution of butterflies in western North America. He is currently on contract with Environment Canada testing the potentialities of remote sensing (both aerial and satellite) for habitat inventories for the purposes of land classification, using the Alberta foothills as a test area.

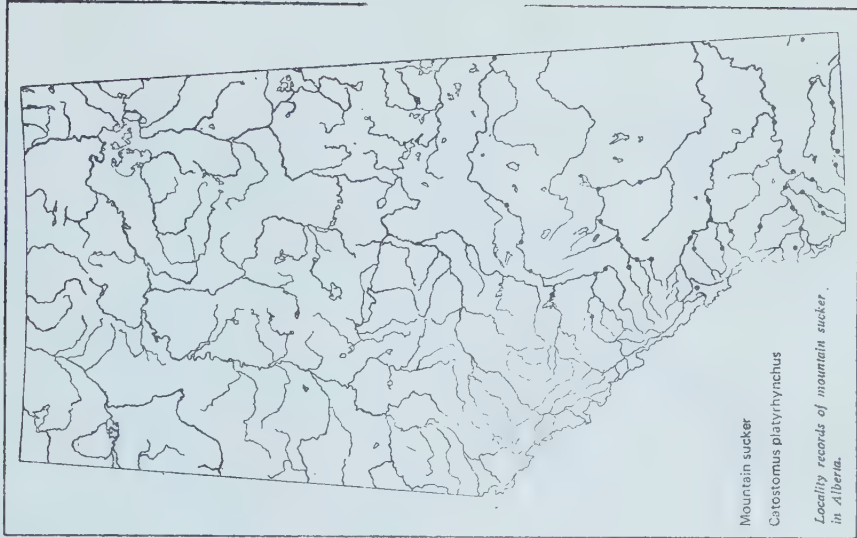
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Errata:

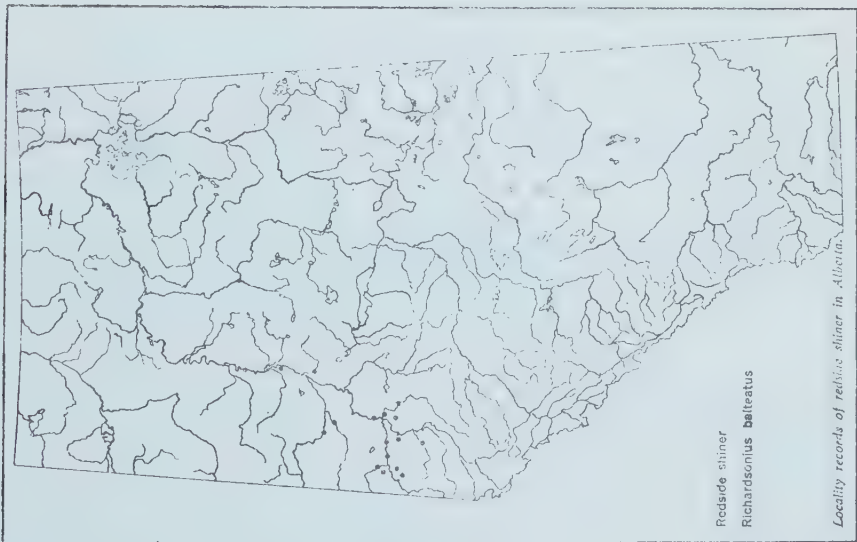
- BURT, W.H. & GROSSENHEIDER, R.P. 1952. A Field Guide to the Mammals. Boston: Houghton Mifflin (Peterson Field Guide Series).

FIG. 2

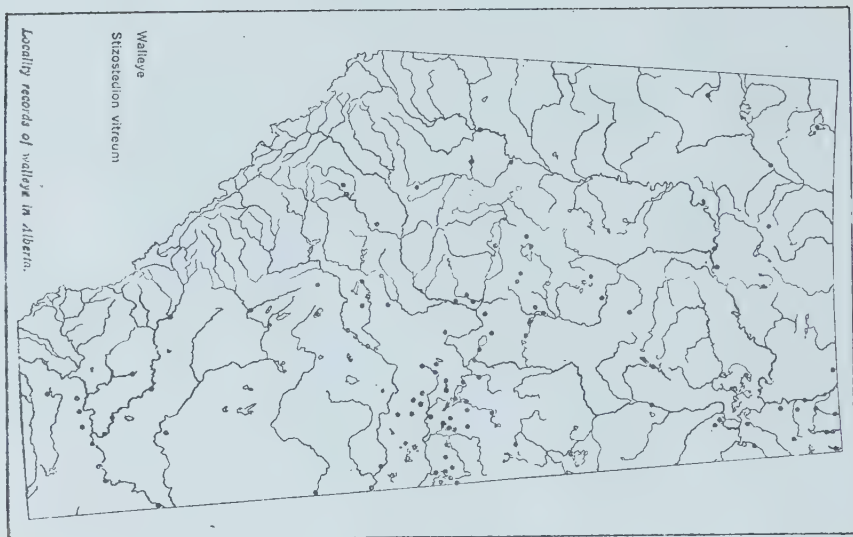


(From Paetz & Nelson, 1970)

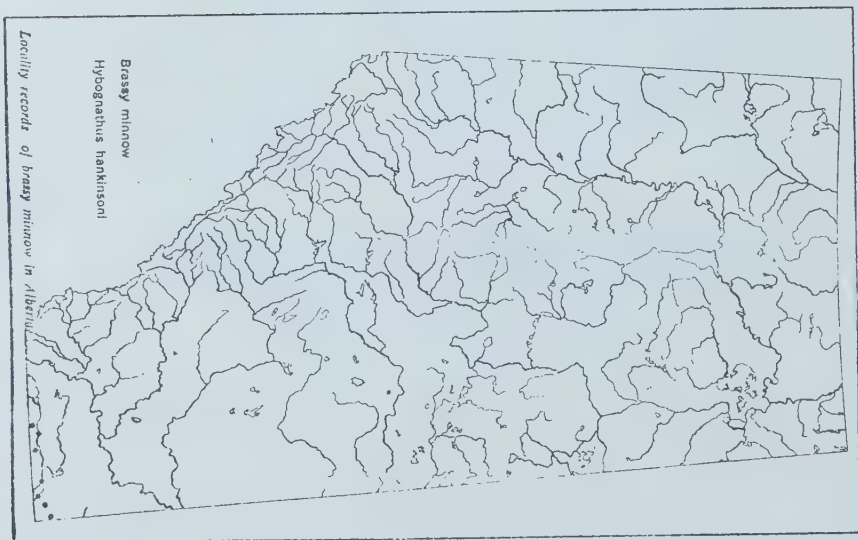
FIG. 1



(From Paetz & Nelson, 1970)

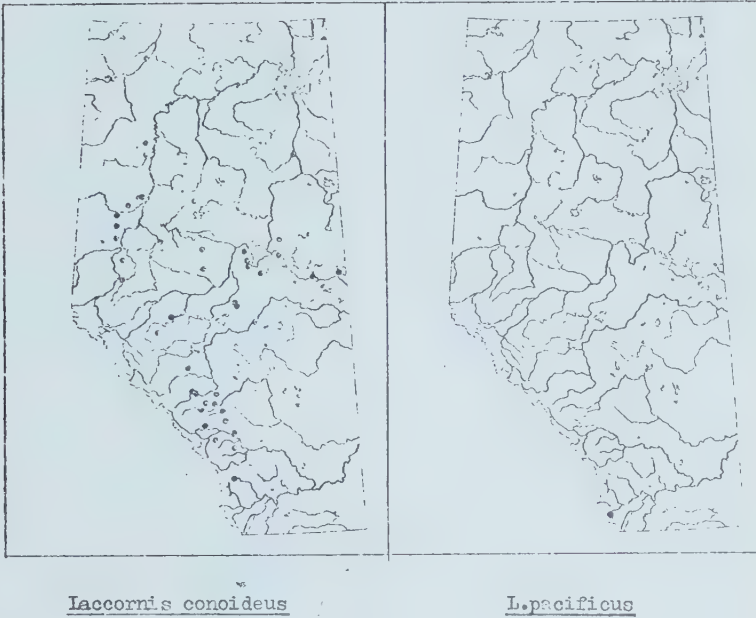


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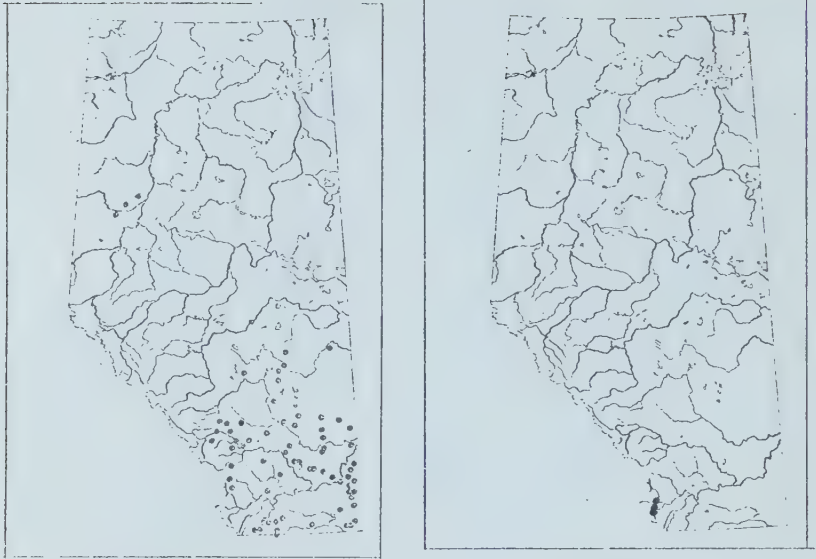
(From Paetz & Nelson, 1970)

Fig. 5

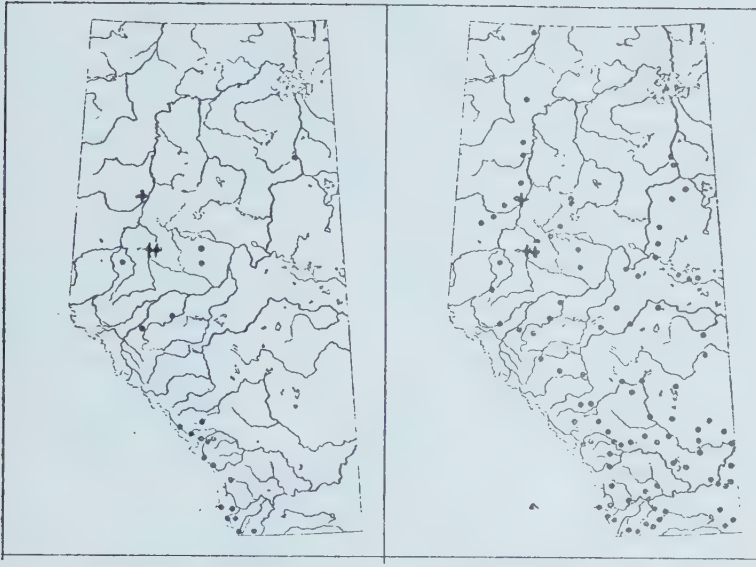


The species L.conoideus is widespread in the boreal regions of North America, east of the Rocky Mountains along which it extends south as far as northern portion of the Oldman River watershed. L.pacificus, a cordilleran species, replaces L.conoideus in the Castle and upper Crownsnest River basins. The relationship between these two species seems to be one of mutual exclusion consequent upon the invasion of L.pacificus through the Rocky Mountains in southwestern Alberta. (From Larson, 1973).

Fig. 6

Agabus punctulatusA. pisobius

Agabus punctulatus occurs throughout the northern Great Plains and east to New England. West of the Rocky Mountains it is replaced by two similar species, one of which A. pisobius extends eastwards into the upper reaches of the Oldman River drainage. (From Larson, 1973).

Colymbetes exaratusC. sculptilis

(+ = hybrid populations)

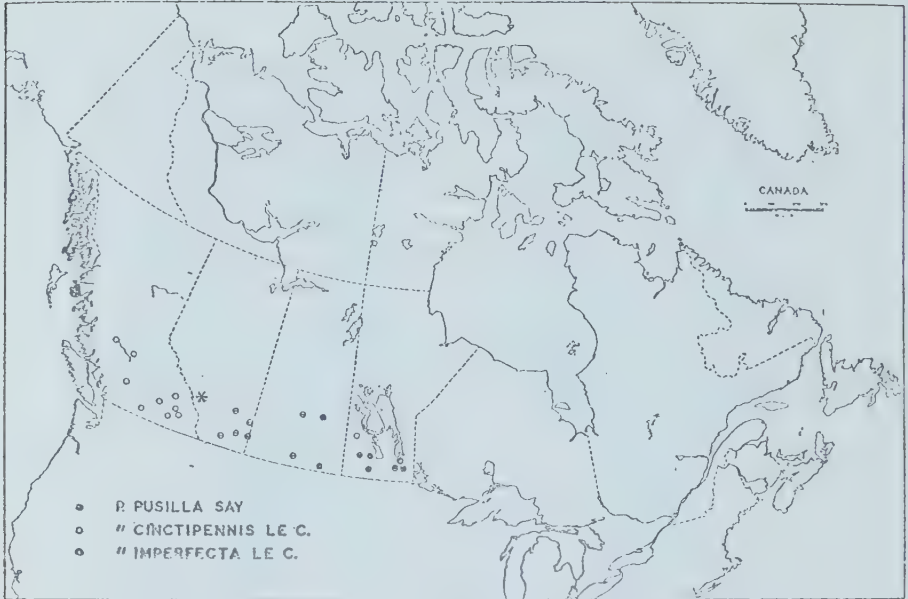
The water beetle Colymbetes sculptilis occurs both in Alberta and British Columbia. C.exaratus occurs in British Columbia and penetrates southwestern Alberta with an eastern limit of distribution along the Eastern Slopes of the Rocky Mountains. It also occurs more sporadically in the Swan Hills - Fort McMurray region of central Alberta.

In British Columbia the two species occupy different habitats, and this is the situation also in the southern foothills of Alberta; near Valleyview and Peace River, however, the difference in habitat preference is greatly reduced and hybridization occurs between the two species.

This hybridization indicates that reproductive isolation between the two species is in fact incomplete and that differences in their ecology are primarily responsible for the lack of hybridization in the foothills -- one of the many examples illustrating the rich diversity of this region of the province. (From Larson, 1973).



Fig. 8



\* Distribution of the subspecies of *Cicindela pusilla*

(from Wallis, 1961)

Before their present flooding, the Kootenai Plains were the only locality in Alberta (marked by \*) where the subspecies of the tiger beetle *Cicindela pusilla* that occurs west of the Rocky Mountains had penetrated eastwards through them into Alberta (elsewhere in Alberta an eastern subspecies replaces it). Thus the Highorn Reservoir eliminated the entire Alberta population of this subspecies (as far as we can determine) and prevented a study of the future population history of this colony in Alberta.

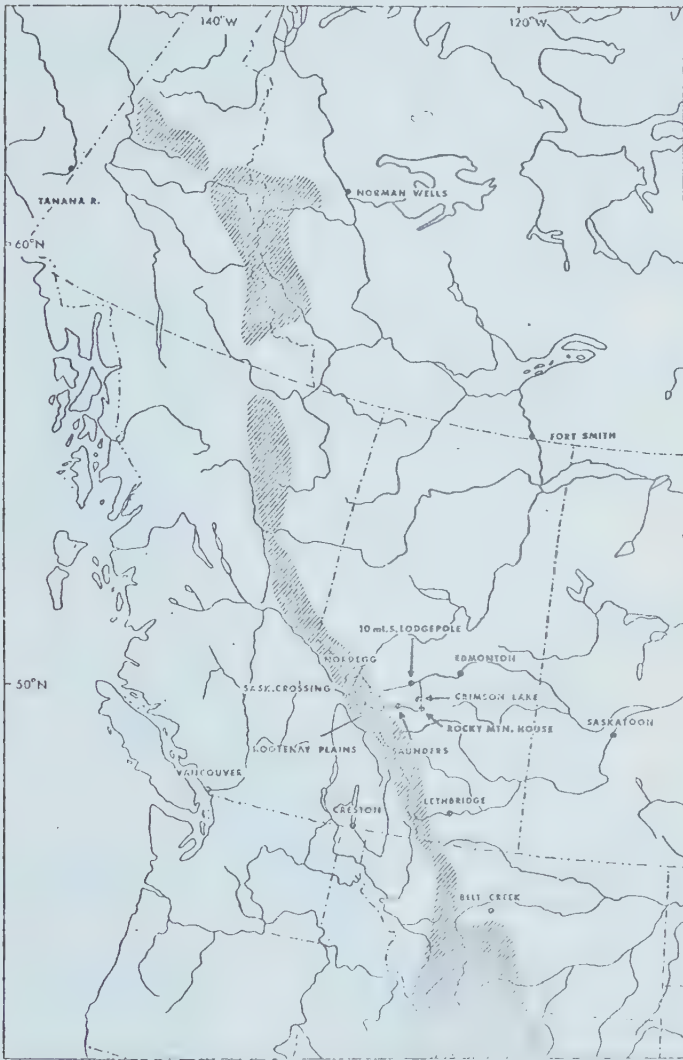


Fig. 34. Locality map of population samples analyzed by hybrid index method. Dark areas indicate elevations above 5,000 feet. (from Freitag, 1965).

The tiger beetle *Cicindela duodecimguttata* of eastern North America hybridizes with *C. orezona guttifera* in western Alberta in a manner known as secondary intergradation or introgression.

## Fig. 10 (caption)

The approximate eastern limit of distribution in the Rocky Mountains and/or Eastern Slopes of Alberta of the following species of Terrestrial Vertebrates NOT otherwise found in Alberta:

\* Amphibians: Long-toed Salamander  
Western Toad  
Spotted Frog

\* Birds (25 species):

|                        |                         |
|------------------------|-------------------------|
| Barrow's Goldeneye     | Steller's Jay           |
| Harlequin Duck         | Clarke's Nutcracker     |
| Blue Grouse            | Mountain Chickadee      |
| White-tailed Ptarmigan | Dipper                  |
| Rufous Hummingbird     | Varied Thrush           |
| Calliope Hummingbird   | Townsend's Solitaire    |
| Pigmy Owl              | Audubon's Warbler       |
| Black Swift            | Townsend's Warbler      |
| Lewis' Woodpecker      | MacGillivray's Warbler  |
| Hammond's Flycatcher   | Gray-crowned Rosy Finch |
| Dusky Flycatcher       | Oregon Junco            |
| Western Flycatcher     | Golden-crowned Sparrow  |
| Violet-green Swallow   |                         |

\* Mammals (12 species):

|                                |                   |
|--------------------------------|-------------------|
| Long-legged Rat                | Richardson's Vole |
| Fika (3 forms)                 | Long-tailed Vole  |
| Hoary Marmot (2 forms)         | Cougar            |
| Columbian Ground Squirrel      | Bighorn Sheep     |
| Golden Mantled Ground Squirrel | Mountain Goat     |
| Yellow Pine Chipmunk (2 forms) |                   |
| Bushy-tailed Wood Rat          |                   |

An additional 18 species of mammals that also occur in the Rocky Mountains and their Eastern Slopes have distinctive populations (subspecies) there from those that occur farther east and northeast across the less elevated remainder of the province. These species include:

|                          |                 |
|--------------------------|-----------------|
| American Water Shrew     | Lemming Vole    |
| American Pigmy Shrew     | Red-backed Vole |
| Little Brown Bat         | Phenacomys Vole |
| Big-eared Bat            | Muskrat         |
| Varying Hare             | Jumping Mouse   |
| Least Chipmunk           | Porcupine       |
| Red Squirrel             | Coyote          |
| Northern Flying Squirrel | Timber Wolf     |
| White-footed Mouse       | Marten          |

(Data based upon maps in Salt & Wilk (1966), Salt (1973), Bart & Grossenheider (1952), Soper (1964) and Stebbins (1966)).

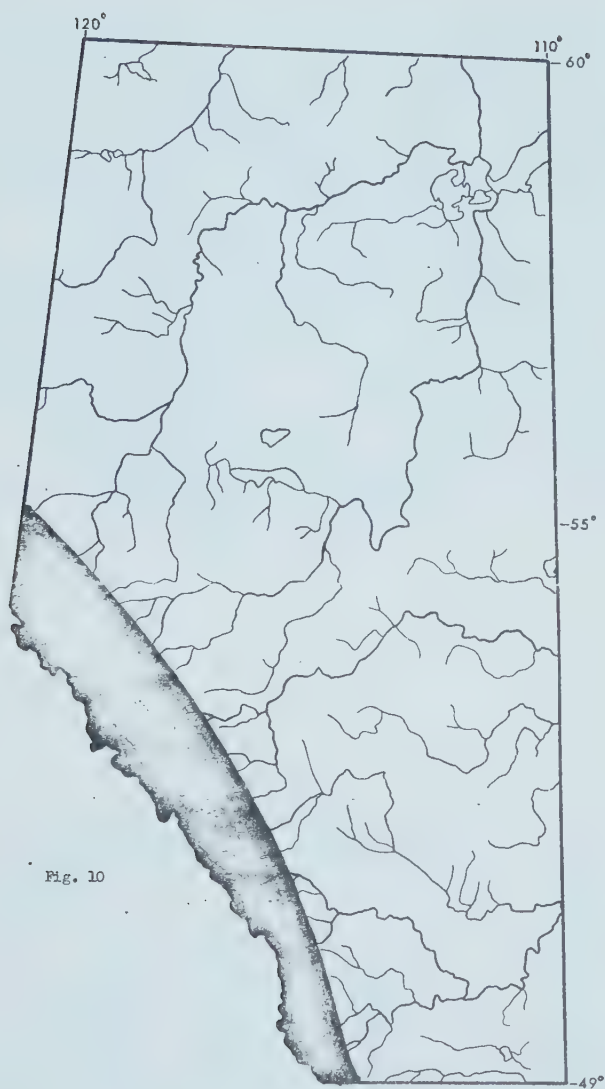


Fig. 10

Fig. 12

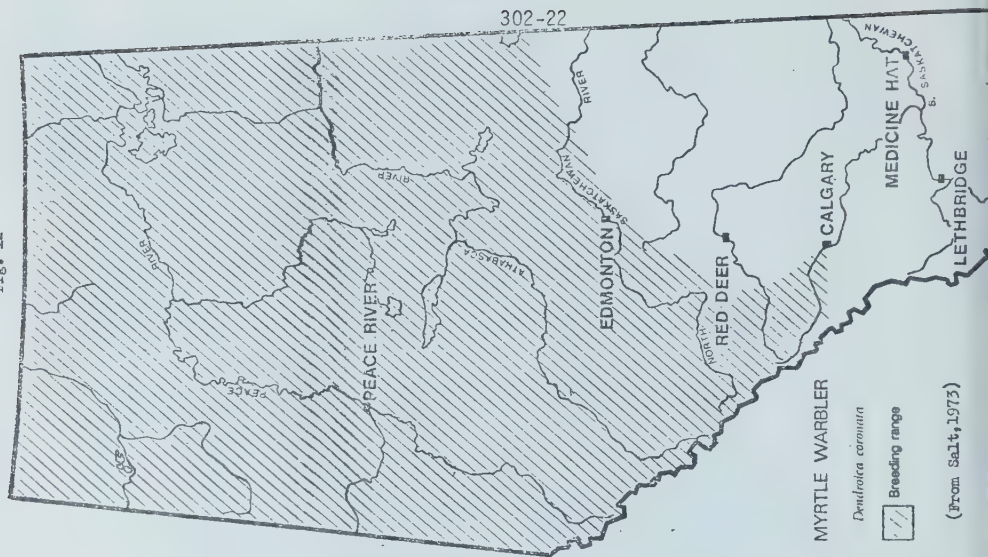
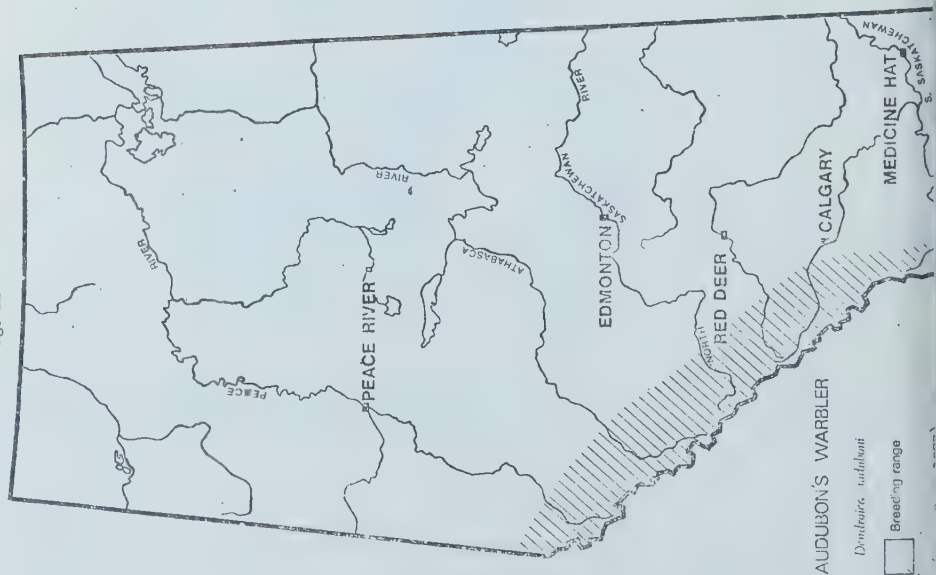
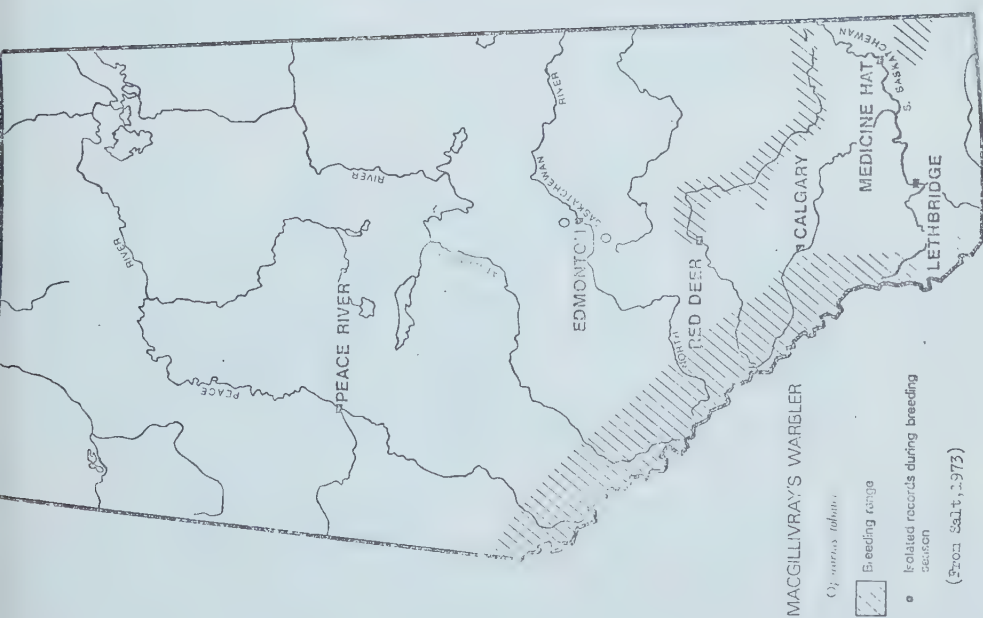
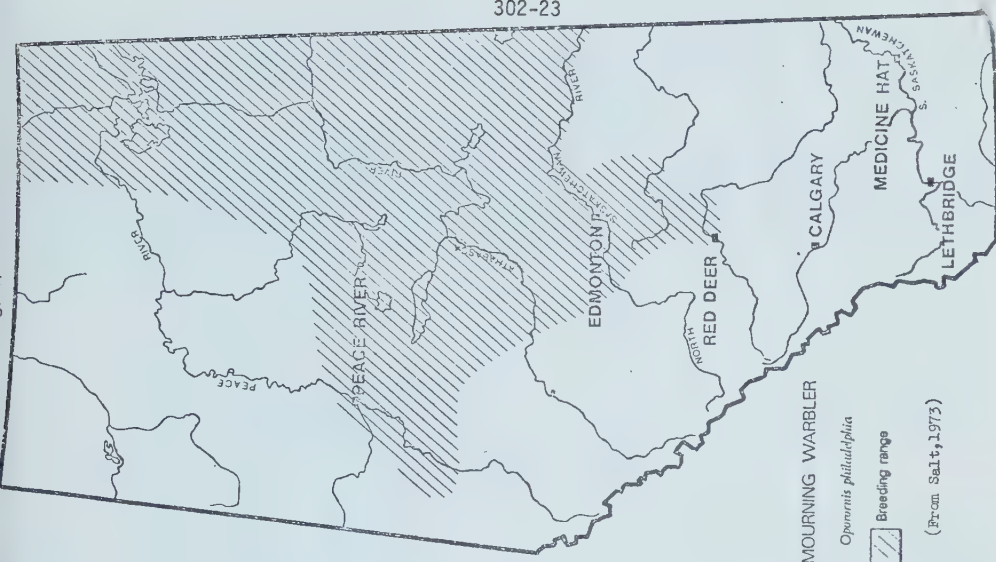
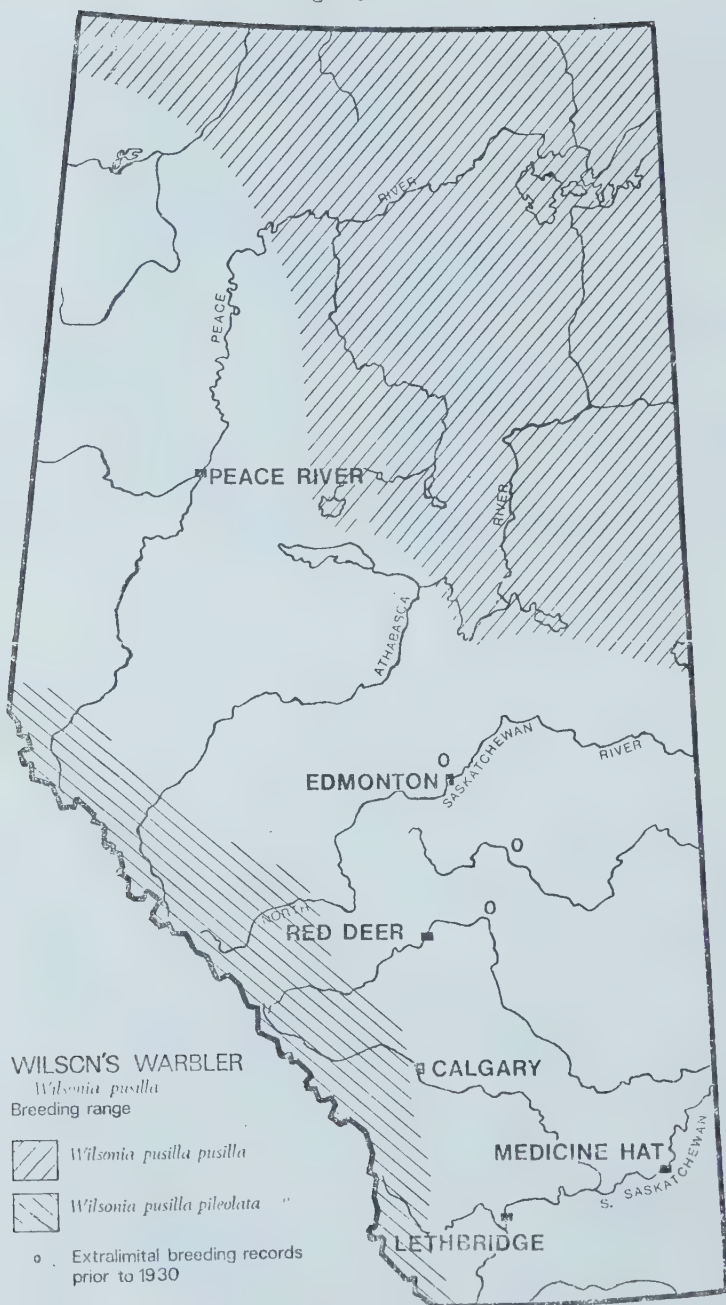


Fig. 11











## QUESTIONING BY THE AUTHORITY

MR. KINISKY:

I thought the brief was excellent and I appreciated it. Just to inject my own note of levity, Dr. Myers, I was looking at this statement concerning these beastly tiger beetles from eastern North America hybridizing with the western jobs and coming out with a thing known as intergradation and introgression, and it sounded like a fearful thing going on.

DR. MYERS:

It's very interesting anyway.

MR. DOWLING:

To your knowledge are any of the species which you have indicated in the caption on Figure 10 indeed endangered species?

DR. MYERS:

No, as far as I know not any of these are on the international list of endangered species that has been put out by the International Union for the Conservation of Nature. As you are no doubt aware, the red books of the International Union for the Conservation of Nature list species in the world of all groups which are currently considered to be endangered. The United States has its own endangered list. Also, in an issue of the Canadian Field Naturalist about two years ago there was a series of articles, three or four altogether, on the endangered species of Canada and perhaps I should have cited that reference in here.

Endangered birds, mammals and fish of Canada were certainly in three of the articles. I don't think any of these species are currently in danger, but I think their ranges and populations will certainly shrink if one goes the full development way. I don't think we're going to go the full development way, but if we went the full development way these species would decline. I've no doubt of that at all.

The point I was trying to make, because I am a conservationist, is that there is a conservation background to all of this. But this brief was not written with that in mind. It was written strictly to bring to your attention that I don't think the Department of Lands and Forests really has an inventory of what it possesses, with the exception of trees, big game, fish and waterfowl. And indeed I have a little sentence here in which I use the word "myopia". There is a certain myopia about the maps outside which list, as wildlife, ungulates and waterfowl, and I think fish are included too. This is myopic in that we're not talking about a couple of dozen species of big game and waterfowl. We're talking about several thousand species of animals and plants, several thousand, and it would be an international tragedy in the long run if we were to allow any of those to become extinct.

I'll give you one example. This is not my particular field, but I've been given the information. In the brief there is one population of beetles that, as far as I know, has been made extinct. This population of beetles occupied the Kootenay Plains. Chief Snow referred to the Bighorn Dam. The Bighorn Dam appears to have flooded the area which contained the only population of that particular species of beetles in this province. Indeed, it's one of these

introgressed populations. It's a hybrid population between the eastern form and the western form. It occurred in the Kootenay Plains because there's a low pass to the west and the western form got into Alberta and hybridized with the eastern one - or happened to do it apparently. Now the Bighorn Dam appears to have flooded that entire site.

That's one example, and I'm sure there are dozens of other examples which could be cited if one only had the information. I'm saying that the scientific surveys have not been done, and don't let the Alberta Department of Lands and Forests tell you that they have.

Brief submitted by: Mr. A. Crozier  
Woodman Junior High School  
Calgary, Alberta

MR. CROZIER:

I represent a group of teachers who have embarked on a field study program which I feel is as good as anybody's in Calgary and perhaps even in Alberta. We refer to it as a positive approach to environment education. About four years ago we stopped studying pollution in our science classes and started studying the positive aspects of our natural environment in Alberta.

According to the Department of Education, we have to meet certain affective and cognitive objectives in our program. To achieve the effective objectives we find that we have to get out of Calgary, in fact get out of a good part of our province, and get into a natural environment which is as close as possible to a wilderness environment. We can't get a value commitment or a value change in a student unless we have this exposure.

I think if you talked to any of my old students over the last six years, the only thing they would be able to tell you is that that was the guy who took them up Mount Laurie. I've had over 2,000 students up Mount Laurie on the hiking trail up the back side, without using rope or anything like that, in the last five years. I've strung those students out on the east slope, spread them out 50 to 100 yards apart, and pulled them to feel the impact of a natural mountain environment. I've taught many science classes in this city, but I believe that that science class is the best one I have taught in 12 years. It works every time and that's something you can't say about most classes.

We terminate our program in Grade 9 with week trips for our classes. In fact, we are reorganizing this spring on the basis of Grade 9 classes. We have southern Alberta tours which include places like Cypress Hills, Writing-on-Stone, Waterton Park and the Crowsnest. Others go north through Edmonton, Hinton, Jasper and Banff. We have three classes out this week; one is in Elk Island National Park tonight. One class of boys is cycling from Jasper. They started this morning and a class of girls is in the snow at Saskatchewan Landing. They are cycling towards Calgary as well. But this is the kind of program we run at Woodman.

We have found it to be very successful and I would propose that an education facility for this kind of program be included in any plan that you bring forth from these hearings. There must be some way of getting kids out of our city environment and exposing them to a natural environment. We have too many students today who are turned off, and the only way you can turn them on is to show them some of these parts of Alberta that we have looked after.

In this program we utilize youth hostels. We use them everywhere the facility is available. We do camp out, but you can only camp out for a very short period each year. I would also propose that youth hostels be included in this education facility plan.

## QUESTIONING BY THE AUTHORITY

DR. TROST:

This is quite interesting to us. We've always had this kind of program in our minds. Is this unique to Woodman Junior High?

MR. CROZIER:

No sir. In fact one of our trips that came in last week mentioned that when they toured the Athabasca Ice Fields there were seven school buses there.

DR. TROST:

Is the program part of the regular curriculum?

MR. CROZIER:

Yes sir, it is.

DR. TROST:

Is it financed out of the school budget?

MR. CROZIER:

We do have some minor money raising, but we own our own school bus, and a week's trip costs \$20 per student.

DR. TROST:

Do all of the students in the class system take this particular program, or is it optional?

MR. CROZIER:

The Grade 7 trips are half days, and for Grade 8 we have full day trips including the Mount Laurie trip. Any Grade 9 student who wishes to go for the week trip qualifies for it.

MR. KINISKY:

What happens to a student who unfortunately can't come up with the \$20 necessary for this kind of trip?

MR. CROZIER:

The budget is set up so that we can absorb three students like that in a class of 32.

MR. KINISKY:

If we wound up with a group of youth hostels in the province, do I understand then that you'd make use of these facilities both winter and summer?

MR. CROZIER:

Yes sir.

MR. KINISKY:

And you'd use these as base camps so that you could continue the educational process for all these levels?

MR. CROZIER:

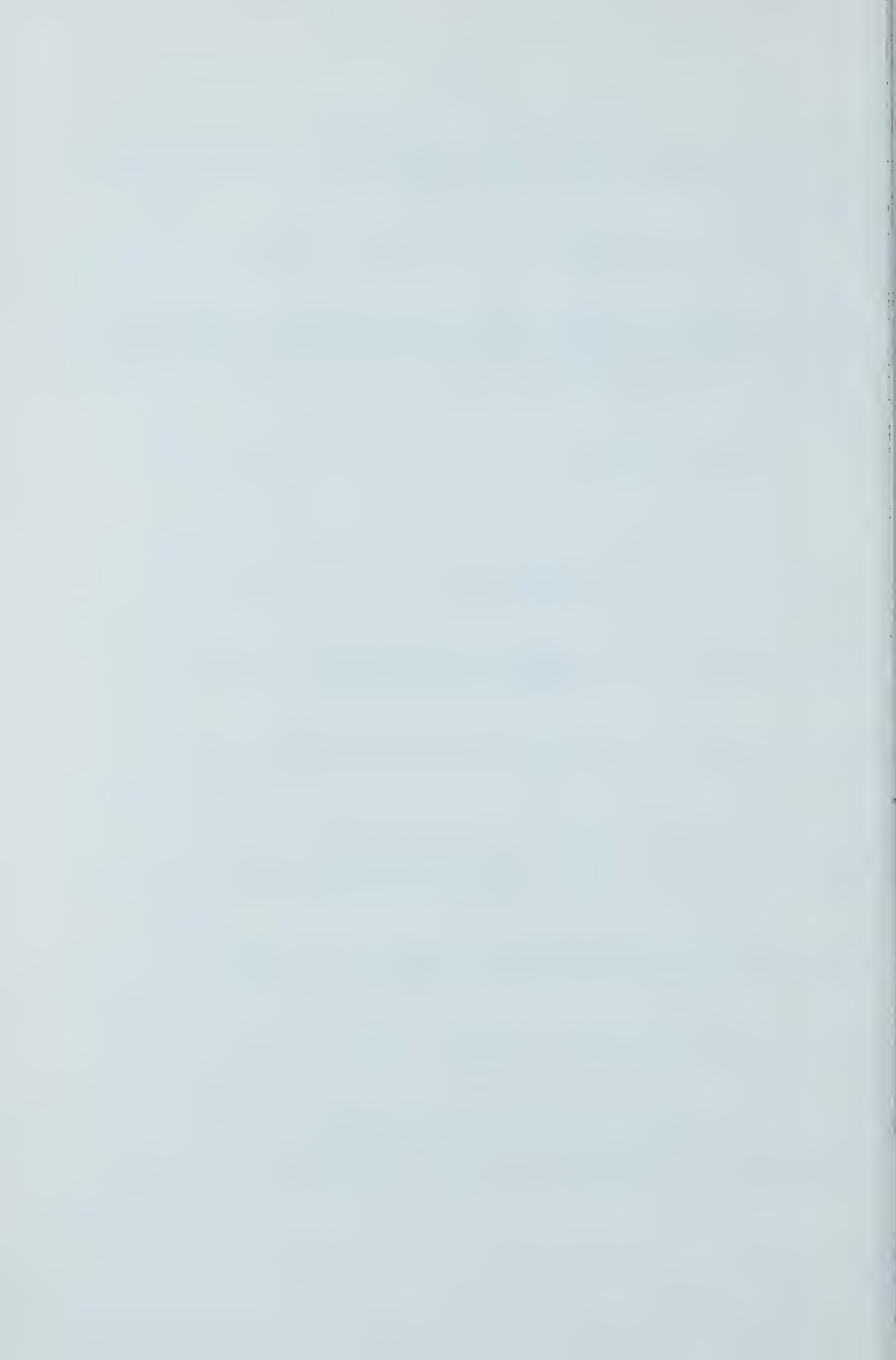
Yes.

MR. KINISKY:

Mr. Crozier, are you aware of the fact that the Public Advisory Committee of the Environment Conservation Authority also has an ad hoc committee which is working precisely on this problem of environmental education in the province?

MR. CROZIER:

I was aware of that.





307-1

## alberta fish & game association

8631 - 169 Street  
Edmonton, Alberta

Presented By: T.J. O'Keefe

June 18, 1973

Environment Conservation Authority,  
9912 - 107 Street,  
EDMONTON, Alberta  
T5K 1G5

Gentlemen:

The Alberta Fish & Game Association has in the past taken a very definite stand on commercial and recreational developments where such development could have an adverse effect on the quality of life enjoyed by all the citizens of Alberta.

The future of the water supply for Western Canada and the potential for an expanded tourist and recreational industry in Alberta lies within the subject area of these hearings. The reason that they are considered as desirable areas today is because of the unique form of protection they had in the past through the Eastern Rockies Conservation Board and other reservations prior to the formation of the Board in 1947. To place tourist and commercial developments at random over the entire east slopes would destroy the relatively unspoiled beauty which has made the area desirable.

In our opinion various areas must be reserved for the exclusive use of single purpose activity and such uses must be considered the prime use. The past policy of multiple use in many recreational areas has too often become multiple abuse with little consideration being given to the highest or best use.

The effects in the Forest Reserve or past over-use by cattle will be apparent for many years to come. The use of Crown Land within the forest reserve for grazing must be curtailed now and eliminated within the next ten years if the recreational potential is to be fully realized.

Oil and gas exploration, while of a relatively temporary nature, has had a profound impact on the area because of the access which has been provided to many previously remote areas. The restoration of drilling sites and seismic lines should be more closely supervised and artificial access to many areas should be prevented.



As an Association, we express strong objections to the continued commercial development within the Mountain National Parks. At the hearings on Proposed National Parks policy, strong representations were made for the preservation of these areas and the location of necessary visitor facilities on the perimeter of the parks. The same sentiments were expressed at the Village Lake Louise hearings.

The tourist industry is expected to become Alberta's number one industry within a few years. Traditionally tourists have sought remote and relatively unspoiled areas. With the increased mobility given by the self-contained recreational vehicles a great deal more attention will have to be paid to the provision of overnight stopping areas for the person who merely parks his vehicle and is "at home".

Wildlife and fishing are one of the main attractions to the area whether for a hunter, fisherman, camera enthusiast, or sightseer. Both of these forms of life require large areas of undisturbed land. Prime winter habitat for all ungulates must take priority over any development.

The present transportation corridors through Coleman, Canmore, Nordegg, Hinton and Grande Cache provide the logical locations for future large scale developments. Smaller service facilities could be expanded at the locations which are presently served such as the Highwood Junction and the Red Deer River forestry road junction so as to provide basic services at reasonable distances.

Development outside these well defined areas should not be permitted with the possible exception of ski facilities. Where possible developers should be encouraged to use private land which would have the effect of restricting facilities to areas outside the present Forest Reserve boundaries. There should not be any outright disposal of Crown Land in the areas in question. Depending on the type of development desired, if private land is not available, satisfactory land lease arrangements should be negotiated. This will ensure proper control of the land by government regulatory bodies.

The development of strip mines on the East Slopes will be the single most damaging activity that has been proposed. Present controls including the new Surface Reclamation Act are insufficient to protect the area. All controls should be made retroactive. Reclamation performance bonds should be compulsory. Resident wildlife biologists should be located permanently at all mine sites. To limit the effects of mining the total number of acres in the Forest Reserve that may be disturbed at any one time should be severely limited and regulated by law. In this way, no more than one or two areas could be operating at any one time and complete restoration of an entire mine site would have to be completed before a new location could be opened.

Because of the relatively small areas of merchantable timber in the southern part of the Province, the control of the forest conservation area should be removed from the exclusive jurisdiction of the Alberta Forest Service and placed under the control of a group similar in formation to the Conservation and Utilization Committee answerable jointly to the Departments of Lands and Forests and Environment. This would ensure a more realistic appraisal of the values of the area.

Economic considerations indicate that the full potential of the foothills can only be realized by maintaining the major portion of the area in a relatively undisturbed state with visitor facilities grouped in service centres on the perimeter of the area adjacent to the present transportation corridors.

We would urge the government to confine development to these areas and maintain the whole recreational area in a manner that will bring the largest benefit to the majority of the citizens of this province.

Yours truly,

A handwritten signature in dark ink, appearing to read 'T.J. O'Keefe', written in a cursive style.

T.J. O'Keefe  
Immediate Past President  
Alberta Fish & Game Association

TJO/mb

## QUESTIONING BY THE AUTHORITY

MR. KINISKY:

Mr. O'Keefe, I'd like to get an opinion from you concerning the Alberta Fish and Game. We listened to some discussions with forestry people who are going to defend the forests against fire at all costs, followed by other discussions with biologists who tell us that, in fact, some of these forests are rather decadent. The timber is not merchantable, it will never mature, and it is, in fact, quite useless, even to the point where they suggest that if the forests burn, by all means let them burn. How do you feel about this?

MR. O'KEEFE:

It's a very contentious subject. Various forestry people will admit to you privately that burning is a very useful tool. They will very seldom do it in public because of the nature of their job. Biologists will tell you that without the succession of fires you will not retain a large animal population. A tremendous amount of the land within our forest, is now, as you say, decadent. It's sterile as far as big game animals are concerned. This has happened pretty well since about 1938, 1939 and 1940 when forest protection reached its peak.

One thing for which you must give the Alberta forest service credit is the tremendous job in forest fire protection. But it is slowly killing off our animals. The forest is increasing at the rate of about three per cent a year. They cut down the number of cattle grazing in the forest at about the same rate. The animals are slowly being forced out and the amount of grazing that we're concerned with for elk is rapidly diminishing within the forest reserve.

308-1

Proposal submitted by: H.K. Roessingh

February 26, 1973  
H.K. Roessingh  
540 - 49 Ave S.W.  
Calgary, Alberta  
T2S 1G5

SUBMISSION

to the Director of Lands  
Department of Lands and Forests  
Government of the Province of Alberta  
Natural Resources Building  
Edmonton, Alberta.

H.K. Roessingh, hereinafter called "the Applicant" is the owner of the SE $\frac{1}{4}$  of Sec. 35 - Twp. 29 - Rge. 6 W of the 5th Mer., and holder of a lease under Permit No 4920 on the NE $\frac{1}{4}$  of the same section.

SILVERCREEK RANCHES LTD. hereinafter called "the Ranch", is a private company, incorporated in the Province of Alberta, operating a camp on the lands owned and leased by the Applicant. All the shares in the Ranch are held by the Applicant and his immediate family.

The Ranch has operated summer camp programs for children, of a recreational and educational nature, since 1962. The facilities of the camp have at various times outside the summer season been used by schools, a college, churches and agencies, to conduct conferences, courses, seminars and recreational programs.

To meet requirements for the immediate future, and to make the operation commercially viable by long-range planning, additional lands and facilities are needed. These plans and needs will be set out hereinafter.

For these reasons, the Applicant applies for a miscellaneous lease on the following lands:

South $\frac{1}{2}$  and NW $\frac{1}{4}$  of Section 2, and East $\frac{1}{2}$  of Section 3, Twp. 30, Rge 6 W 5 Mer.

This submission is made in response to the advertisements by the Department, calling for commercial type recreational or tourism facilities.

The project.

With due recognition to the fact that the public demands facilities for a great variety of recreational activities, the owners of the Ranch are deeply concerned that an increasing number of these activities is of a nature to have an adverse impact on the natural environment. The introduction of large numbers of snowmobiles and All Terrain Vehicles, the construction of large private cabin developments and elaborate and luxurious recreation and tourist facilities are obviously in demand today, but some of these developments are destructive to the natural environment, others demand relatively large areas to satisfy the demands of a few people.

The objective of the owners of the Ranch is, to provide an opportunity to as many people as possible to enjoy a little disturbed environment, to use this environment for educational purposes and for studies, or even just to be away from large crowds for a while.

The Ranch has promoted and supported this type of activities ever since its inception. By its particular location, the Ranch provides a rather rare mixture of Alpine and Parkland fauna and flora. For many years, bird identifications and - counts have been made at the Ranch. The staff keeps track of changes in bird population from time to time. Some rare species of orchids and ferns are carefully protected.

In 1971 and 1972, the owners initiated and supported work on an archaeological inventory of the area, conducted under an OFY grant. Reports on these and other studies done by the owners, the staff, and guests at the camp are available.

For all developments, major or minor, planned for expansion of the facilities, on lands at present controlled by the Applicant or any additional lands that may be added, an assessment of the impact the planned development will have on the environment will be part of the planning. This principle will apply to building sites, toboggan runs, ski trails, access roads or any other development. The owners of the Ranch are fully prepared to work together with government agencies towards this end.

History.

From its inception, the Ranch has offered a varied program for children, with the main emphasis on western riding and outdoor education subjects such as ecology and conservation. Silvercreek Ranch was the first and till recently, the only independent member of the Alberta Camping Association (meaning that it was the only camp not sponsored and subsidized by a church or agency). Over the years, it has attracted children from all provinces in Canada except the Maritimes, and from several States of the United States and occasionally from various European countries.

Since 1966, the Ranch has been responsible for an exchange program with young students from Quebec, and has been host to groups from that Province each summer since 1966.

Since 1967, the Ranch has operated special outdoor education camps, originally subsidized by the Department of Youth of the Province of Alberta. The program at those special camps centred around field studies in ecology and sciences, and was combined with recreational activities.

Since 1971, the facilities have been used by the Mount Royal College in Calgary to conduct outdoor courses in a number of Departments. Since 1970, the provincial Department of Culture, Youth and Recreation has conducted its annual leadership course for playground supervisors at the Ranch.

The owners.

Since the operation of the Ranch has not, so far, produced an income for the owners, they are employed in Calgary, and conduct the business of the Ranch on a spare-time basis. The Applicant is employed in a management position by Canadian Arctic Gas Study Ltd., Mrs Roessingh is manager of and partner in "Happy Hours Kindergarten" in Calgary. Both have actively contributed to the camping movement in Alberta and in Canada. Amongst many other functions they have had over the years, Mrs. Roessingh is past president of the Alberta Camping Association, and the Applicant is chairman of the Standards Committee of the Canadian Camping Association. Several of their children are taking an active part in the operation of the Ranch.



Both the Applicant and his wife have degrees in science. Both have extensive experience in camping and outdoor education.

Present facilities.

In 1962-'63, the main lodge was constructed. It is 2,000 square feet in size and has two stories. It is equipped with plumbing, hot and cold running water, sewage, and connected to the Calgary Power system. Three separate cabins for sleeping accommodation were also built in 1962. In 1964, a sleeping cabin complex with eight units, each accommodating a maximum of eight persons, was added, and in 1967 a staffhouse with four bedrooms and a lounge, a total of 800 square feet. In addition there are barns and storage space. Total capacity of these buildings is 95. For summercamp, maximum registration is kept at 70 campers. All these buildings are located on the land owned by the Applicant.

A log house and a craft studio are under construction on the leased land. Sizes are 1,150 and 300 square feet respectively. These buildings are located on the leased land. The craft studio is a semi-permanent building, built on skids. These buildings will add 25 people to the total capacity of the facilities. They will not have wiring or plumbing. They are in a fairly remote area, accessible by a trail. No gravel road is planned. The buildings are of low-roof construction in order to make them easy to heat and suitable for winter use.

Expansion plans.

The Applicant has been approached by one of the art instructors of the Mount Royal College with the proposal that the Ranch provide space to build a residence and arts studio. The instructor would offer private arts courses, the Ranch would provide accommodation and recreational programs. The instructor is well known and well established, and there is every reason that his courses would attract enough people to make the plan viable. His residence and studio would have to be built far enough away from existing facilities not to interfere with other programs.



Staff and students of the Mount Royal College have enquired about the possibility of building a log house on land now occupied by the Ranch or adjoining it. The project would be under the supervision of the Applicant. This request points strongly to a long-term commitment of the College to continue to use the facilities as a base for its outdoor programs. It will probably lead to the location of permanent staff to conduct those programs at the Ranch.

Cross country skiing has gained spectacularly in popularity in the Calgary area in the current winter. Since the existing buildings are in their present state not suitable for use in extremely cold weather, and the loghouse will not be completed till spring, it was not possible to take advantage of this development, but proper publicity in the fall of 1973 should result in intensive use next winter by skiers. The general area is ideally suited for the sport, and the fact that the loghouse will be accessible only by horse-drawn sleigh, on skis or on snow-shoes, should prove an extra attraction. A toboggan run could easily be constructed, summer camp staff could be brought out for week ends to look after children and give parents the opportunity to ski on their own.

At this point it should be mentioned that the operators do not now, and don't plan to admit snowmobiles or all-terrain vehicles on the land. There are also no plans to cater to hunters, although occasionally hunters have been accomodated at the Ranch and horses have been made available to hunters.

#### Personnel.

For the summercamp operation, a staff of 20 to 25 is hired on a temporary basis. Wranglers, riding instructors, kitchen personnel and caretakers are hired locally, most of the camp instructors and counsellors are hired in Calgary and elsewhere. At present, winter staff consists of two men to look after the horses and clean up after use. Cooks are brought in as and when needed.

More intensive use in winter and expansion of the facilities would result in full time work for a camp manager, two additional maintenance and caretaker staff, two permanent cooks and a program staff of at least two initially, and more as use of the facilities increases over the years.

Capital expenditure.

To date, investment in buildings and equipment (not including the land) has been slightly in excess of \$70,000.00. Completing and equipping the buildings now under construction will bring this to about \$75,000.00. Fully winterizing the main lodge and other existing buildings will require an estimated \$12,000.00, including a heating system. Construction of the proposed residence and studio of the arts instructor will not be at the expense of the Applicant or the Ranch, and no estimates are available. The Applicant is, however, satisfied that the proposer of this development is financially capable of handling this project.

The Applicant proposes to approach the Alberta Commercial Corporation for assistance in financing the expansion. The necessary financial statements are now being prepared.

Construction of the log house proposed by Mount Royal College will involve an estimated \$4,000.00 not including the cost of labor, which is to be financed by the College.

Final remarks.

While admittedly some of the programs promoted by the Ranch since its inception seem to have been somewhat premature, and therefore the business has been growing more slowly than was expected, a combination of circumstances promises well for the immediate and long-term future.

- a) Increased participation in cross-country skiing.
- b) Increasing awareness of the importance of outdoor education.
- c) Increased need for recreational facilities summer and winter.
- d) Increased leisure time and consequent increased need for arts courses.
- e) Easier travelling and more mobility in the pursuit of recreation.

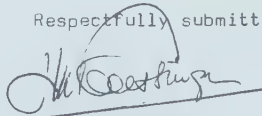
- f) Availability of government funds for development at a more reasonable rate than available from commercial sources for rural development.

To meet the needs for recreational facilities, space and development funds are needed in addition to the experience and professional know-how of the Applicant and the Ranch. This submission serves to fill the need for space. How many of the 5,000 students at Mount Royal College will use the facilities regularly, cannot be predicted at this time, but the number is increasing. The number of campers registered at the Ranch has recently been about 200 per summer, and it is increasing. The number of skiers that would use the Ranch as a base for crosscountry skiing may run into many hundreds each winter.

The Applicant commits himself to make the land available at a nominal charge or free of cost, as has often been done in the past, to camping organizations accredited by the Alberta Camping Association. The latter condition is made in order to assure that such use will be under proper supervision and no mis-use will be made of the environment.

The Applicant commits himself to accept any conditions the Department wished to attach to the use of the land, such as proper conservation methods, reafforestation, or any others.

Respectfully submitted

A handwritten signature in dark ink, appearing to read 'H.K. Roessingh', written over a horizontal line.

H.K. Roessingh.

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A SUBMISSION  
TO  
THE ENVIRONMENT CONSERVATION AUTHORITY OF ALBERTA  
ON  
LAND USE AND RESOURCE DEVELOPMENT IN THE EASTERN SLOPES

June 18-20, 1973

Presented By: W.J. Gibson

Imperial Oil Limited

A SUBMISSIONTOTHE ENVIRONMENT CONSERVATION AUTHORITY OF ALBERTAONLAND USE AND RESOURCE DEVELOPMENT IN THE EASTERN SLOPESINTRODUCTION

Imperial Oil Limited (Imperial), a fully integrated oil company, registered to do business in Alberta, is actively engaged in the following operations in Alberta: Petroleum and other mineral exploration, gas and oil development, pipeline operations, oil and gas refining, distribution, marketing and service facilities.

Mineral development contributes in a major way to the economic well being of the Province of Alberta. The economic impact of this development produces a "ripple effect" and is felt in many segments of our society. Imperial is prominent in this Alberta Industry and has 3014 employees engaged in managing and operating its undertaking in this Province. The goods and services of many other Alberta industries are used extensively in carrying out its business.

Imperial and its employees share the concern of all Canadians in matters pertaining to environmental protection. It contends the public interest is best served by regulations that:

- 1) place coordination and direction with appropriate agencies;
- 2) provide protection of the environment at a cost to the economy which is appropriate to the protection achieved;
- 3) be based on standards of quality which are developed from adequate data;
- 4) Provide reasonable time to develop and implement the methods of improvement;

- 5) treat equitably all materials and operations which contribute to environmental degradation.

#### ENVIRONMENTAL PROTECTION

The procedure adopted by the Environment Conservation Authority in conducting public hearings on Land Use and Resource Development in the Eastern Slopes is excellent. Imperial would submit that the overriding long term objectives of those responsible for land management in the subject area, should be to assure the eastern watershed is protected by maintaining adequate vegetation cover and that the streams and rivers are kept clean. It is also essential that adequate air quality standards are maintained. By so protecting the environment in the area, it follows not only the lands involved but also neighboring lands to the east will not degenerate.

While it is impossible in Imperial's view to forecast with fair accuracy the sociological needs of future generations, it is imperative that man's actions today do not put these needs in jeopardy. Imperial contends that the reasonable requirements the public has for this land now can all be satisfied. Appropriate legislation can be passed to allow multiple use activities including industrial uses to be carried out in harmony and at the same time protect the environment for future generations.

It is inevitable that man's utilization of this land will result in some alterations or changes in the existing environment. With proper planning these alterations can be readily accepted by nature with little or no adverse effect. It should be further recognized that many of man's specific demands on an area will be of relatively short duration, perhaps 20 to 50 years. A well thought out restoration program subsequently would return the environment to its natural condition within a few years. If there are alternate demands at that time for existing facilities such

as roads, etc. these could be provided for in the overall restoration program.

Imperial submits that the existing requirements and controls governing mineral exploration and development are adequate to protect the environment. These will of course be modified as time goes by to keep abreast of technological and social changes of the future as they have in the past.

#### LAND USE REQUIREMENTS FOR THE AREA

The lands in the Eastern Slopes of the Rocky Mountains and the Foothills areas of Alberta are currently used in a multitude of ways. Farming, ranching, forest utilization, summer and winter recreation, oil and gas development, surface and underground mining, hydroelectric power developments are but a few. Much of the land, however, because of the terrain and limited access, exists in its natural state. Population and industrial growth will no doubt increase or change the demands on the lands and inroads will be made on some untouched areas. Future uses as a result will all have to be considered in any long term plans of environmental control.

Oil and gas reserves have been widely developed throughout the area and the potential for future exploration success for added reserves is almost a certainty. Similarly, the area is known to contain large reserves of coal and is also considered prospective for other minerals. If industry is to successfully explore for and develop these resources, and, Imperial submits, this is necessary and in the public interest for economic and social reasons, continuing appropriate legislation will be required. This legislation must recognize the need for exploration, all weather roads, power supplies, etc. as well as the requirements for recreation and commerce. The multitude of disciplines involved in such an undertaking indicates a need for interdepartmental liaison within the Government.



Government-Industry co-operation is also necessary if exploration development and industrial activities are to continue. In Imperial's view these activities can be carried out and environmental protection still afforded.

Existing legislation requires that all construction be carried out so that surface disturbance is kept to a minimum and that vegetation cover is restored as soon as possible, natural water courses are preserved and protected and that acceptable air quality standards are maintained. These disturbed areas, when they have been seeded to grass, increase the grazing areas available to wildlife which is clearly demonstrated by the large number of elk, deer, etc. that graze along the main highways in the National Parks. The presence of these grazing animals attract the carnivores, etc. as well and it well could be that such resource development activities actually increase the wildlife in the area.

The location of petroleum and other minerals is governed by geological happenstance and Imperial submits that the Government should recognize this facet of the industry combined with the contribution it makes to society. Lands occupied by mines, well sites, oil and gas production and pipeline facilities do not occupy large areas but must be dedicated to specific use during the period of time required to recover the specific resource. Other requirements for land for the purposes mentioned such as roads, power transmission, pipeline rights-of-way, seismic lines, etc. can and do have multiple use, for example access for farming and ranching, lumbering, hunting, hiking, fishing and other forms of recreation. It follows that only a very small amount of land will actually be disturbed and a larger associated portion will be available for other legitimate and desirable public uses.

Imperial recognizes that there will be areas where restrictive measures are desirable and should be enforced. These,

Imperial would suggest, need not be large in extent. For example, within the Eastern Slopes area there are certain preferred sections which are either summer or winter grazing lands for elk, deer, and sheep; certainly an effort is required to ensure a minimum encroachment by man in these selected areas. The main river valleys require more than normal protection, not only from disruption by roads, stripping operations, lumbering, etc. but particularly from potential pollution by sewage or wastes of any kind.

#### IMPERIAL'S ACTIVITIES IN EASTERN SLOPES AREA

##### SERVICE FACILITIES

Imperial's initial activity in the area in question dates back to the turn of the century with its operations designed to meet demands for petroleum products via service stations, garages, bulk stations and the like. This phase of our operation has undergone continuous change as the demands for petroleum products have grown. Today Imperial's marketing outlets are primarily confined to communities that have been established or adjacent to main transportation arteries. Imperial also has invested in other service facilities such as restaurants, limited sales outlets, etc. to help meet the growing needs of people travelling through the area.

Construction and upgrading of these types of facilities so that they are acceptable to the public and in keeping with the surroundings are continuing processes. Efficient supply and distribution systems are essential in providing these services which are so necessary for the motorist and other uses of petroleum products, hence, consideration must be given to these factors when legislation is enacted covering roadways, road design, load limits, etc.

##### RESOURCE DEVELOPMENT ACTIVITIES

Imperial's resource development activities in the Eastern Slopes dates back to 1918 when a geological surface party worked in

the Coalspur area. In 1920 Imperial began exploration in Turner Valley and has had an active interest in resource development of the Eastern Slopes since that time. Today Imperial is the operating manager of the Quirk Creek gas field (a multiple ownership) situated 30 miles southwest of the City of Calgary. Imperial also holds a working interest in gas producing properties which are operated by others such as Wildcat Hills and Brazeau which are located west and north of the City of Calgary. Oil operations are also being carried out in the Pembina field. Interests are also held in other properties throughout the area, most of which have not been explored in detail, however, some of which are known to contain presently uneconomic hydrocarbon reserves and will be the subject of development later.

The Quirk Creek field is fairly typical of those situated in the Foothills belt of Alberta and a brief summary of the development of this pool, the gas plant and the steps taken to protect the environment exemplifies a studied program to conduct operations while at the same time protecting the environment. This Mississippian reservoir is located southwest of Calgary and in an area currently being farmed but does extend into the Foothills Crown forest reserves. It is approximately two miles in width, ten miles in length. Success in a currently drilling well will extend the size of this field.

The initial discovery well was drilled in 1967 and discovered gas containing 8.5%  $H_2S$ . In the development of this pool eleven wells have been drilled, nine were successful and are on production. 146 miles of seismic line were run and five miles of road constructed to service the operation. Eleven miles of gathering lines were installed to tie these wells into a gas processing plant. A second line has been installed in the same ditch to provide sweet gas to the wellhead heaters. The use of processed gas in this service eliminates the venting of  $SO_2$  at the various producing well locations.

The processing plant removes the undesirable components such as hydrogen sulphide, carbon dioxide and water from the raw feed gas. A minimum of 95% of the  $H_2S$  is recovered as elemental sulphur. The balance is converted to  $SO_2$  and vented to the atmosphere together with other impurities through a 350 foot stack. After removal of these impurities the feed gas is then segregated into marketable natural gas and liquid hydrocarbons. The gas is marketed through a tie to the Alberta Gas Pipeline at the plant gate, the liquid fractions are moved through a 35 mile operator constructed and operated line to a point near Cochrane when it enters a major gathering grid. Some of the sulphur produced has been marketed in liquid form with the remainder stockpiled on the lease.

The total area utilized for wellsites, plantsites, and access roads, exclusive of municipal and forestry roads, amounts to only 100 acres which is less than 1% (actually 0.78%) of the total field area.

All exploration and development work was carried out with prior approval of the appropriate regulatory authority. To assure adequate protection of the environment rigid operating requirements were adhered to and in many instances exceeding those required by Provincial regulations.

Today seismic lines have been reconditioned in accordance with Government regulations. Pipe line rights-of-way and road allowances have been cleaned up and successfully reseeded to grass with one isolated exception and steps are underway to correct this deficiency.

The latest technology has been employed in the design of the plant and field facilities, for example:

- a) Electronic instruments control the various plant processes.

- b) An extensive system of on line analyzers involving five chromatographs, a sulphur stack analyzer, a stack emission monitor operate in conjunction with a mini-computer.
- c) Automatic and manual emergency shut-down controls have been incorporated.
- d) The flow through the liquids pipe line is continuously monitored. This line is equipped with block and remote controlled shut-down valves located at critical locations throughout its length, permitting rapid effective shut-down in the event of a misadventure.

Imperial is an active member of the Turner Valley Oil Spill Cooperative. This organization was established to facilitate the utilization of the combined resources of industry to control and clean up a liquid spill thus minimizing environmental degradation.

As has been explained, Imperial has preserved the ecology of the Quirk Creek project area through strict environmental control. An effort has also been made to have the facilities blend in with landscapes, e.g. office building faced with local stone. A complete survey was conducted prior to start-up to determine the base line air quality, floral and faunal conditions. One of the techniques employed was an analysis of vegetation stress through interpretative study of aerial photographs. Also included was an analytical investigation of creek water and a river biota study, besides the sampling and analysis of soil and vegetation at strategic locations. Ground level checks for sulphur dioxide are made at eight hilltop locations in the plant vicinity. Continuous hydrogen sulphide and total sulphation monitoring units are at eleven locations, while six atmospheric corrosion stations function to study possible effect upon different metal and paint samples. A steam jet on the plant flare stack

eliminates production of black smog.

Produced water is stripped of dissolved  $H_2S$  and disposed of by injection in an approved formation. Process waste waters are impounded in an evaporation pond lined with an impervious layer of clay, thus preventing any pollutants from entering the watershed or the ground water.

We submit Imperial's operations are not adversely affecting the environment and are being conducted in such a way that they are compatible with the demands that others may have on this area.

The natural resources currently being extracted are non-recurring and when they are depleted it is Imperial's intention to remove production facilities and such surface areas not required at that time will be reconditioned so it may revert to its natural state.

Imperial submits that this is only one of many examples that could be cited where resource development is being carried out in harmony with and providing benefits to the public of Alberta with minimal alterations to the environment. The foregoing certainly illustrates the fact present controls and requirements, when properly implemented, do minimize the impact of operations on the environment. They also show Industry's desire to protect the environment.

We wish to inform you, in Imperial we have undertaken a major communications program to instill in all our employees a commitment to environmental protection of the company's activities, whether they be in this area or elsewhere. This program will be extended to dealers and agents to encompass all areas of our operations.



SUMMARY AND CONCLUSIONS

For the reasons outlined above, Imperial submits:

1. Utilization of the Eastern Slopes by any sector of the public will result in some changes to the environment. These changes, however, need not be major or detrimental in effect.
2. Adequate but practical legislation has been and must continue to be enacted to assure the protection of the environment. Special care must be taken to continue to protect the watershed, associated lakes and streams and the indigenous flora and fauna in environmentally sensitive areas.
3. Multiple use is being made of this land and all who have demands on it can exist in harmony if they co-operate each with the other to assure utilization with minimum disturbance. Well coordinated objective planning is essential if the public is to obtain the maximum benefits from this area.
4. Economic development of the mineral resources of the area must be allowed and encouraged as the benefits accruing to the people of the Province are desirable. Government-Industry study and co-operation can best achieve the harmony that is required to satisfy development and proper environmental control.
5. Mineral resources are finite and when they are depleted the affected surface can be returned to a near natural state.



## QUESTIONING BY THE AUTHORITY

DR. TROST:

It's clear in your submission, Mr. Gibson, that the reason you focused on the Quirk Creek field was because it is a sour gas field and you had, therefore, particular problems to handle. In handling them, have you had any complaints or difficulties with any of the people who are resident in the area?

MR. GIBSON:

Initially yes. We had some complaints, and that was primarily during the testing period when the wells were first brought in. They were treated with acid, they had to be flared and were flaring a lot of, not only sulphur dioxide, but sour acid gases. We did have some complaints and I suggest justly so. However, I don't know how else we could clear the situation up. Of late, I think we've got along very well with the community.

DR. TROST:

How long would "of late" be?

MR. GIBSON:

The last couple of years.

MR. KINISKY:

Certainly your company is to be congratulated, especially for the business of carrying on base line air quality flora and fauna conditions before the start up of the plant. That's the sort of thing that I think is going to make some good input into what happens to us environmentally.

Are there any cooperative environmental studies in progress in the petroleum industry? That is, are all of the companies cooperating in the distribution and dissemination of environmental knowledge and experience gained?

MR. GIBSON:

Yes, this is centred in specific areas. To name a few, which I'm not intimately familiar with, the operators in the Whitecourt area have undertaken a joint study there. Operators in the Athabasca tar sands are initiating studies in that area and I'm sure there are others.

MR. KINISKY:

Do you feel it is necessary that the petroleum industry does have access to all of the areas of the eastern slopes, including those that are called wilderness and otherwise?

MR. GIBSON:

I think that question is probably going to have to be answered by the authorities. As I mentioned, your mineral wealth is deposited by geological 'happenstance'. I think we all recognize the benefits the people of Alberta derive from that, economically and socially, and if they're barred from capturing these resources the people will suffer. I would suggest however, that with a well conducted and oriented program, oil and gas development and other minerals for that matter,

can be successfully extracted without serious conflict with other users of the area, even in the wilderness areas.

MR. KINISKY:

In the past some damage has been done which still remains and is quite apparent. Is any effort being made to try to repair some of these particularly bad areas? I'm thinking, for example, of seismic lines which have turned into rivers and have changed water courses, and which are making a contribution to the degradation of water quality. Is any thought being given to perhaps going back and surveying this damage and seeing what repair jobs can be done to satisfy the ecological necessities?

MR. GIBSON:

I'm afraid I can't answer that question with authority. I do know that regulations have tightened up and I think we all admit that we have done things we ought not to have done, both as a company and individually as far as the environment is concerned. I think the standards now are much more rigid and the operators are more aware of them. But to repair lines that were cut 10 and 15 years ago, I'm afraid I can't answer that.

## OPEN DISCUSSION PERIOD

DR. GARDNER:

Dr. J. S. Gardner on the faculty of the University of Calgary. I'm retired. I'm very busy. I'm very happy. I'm anxious to talk to you.

Tonight I want to speak about our youth. I think our youth are important now, have been and will be in the future. I recently came back from two weeks in B.C., and of course I read the newspapers as soon as I get back to see what I've missed on the home front. I picked up one paper and read it and I've been mad ever since. They simply want no part of "those beggars of society". This was a comment in the newspaper of a submission that was given down in Coleman I believe, and this gentleman had these ideas about the youth of our country.

The Alberta Youth Hostels Council is seeking government permission to construct three hostels within forest reserve areas of Oldman River basin. The announcement has generated both bitter and threatening comment from several people in the area, most of it coming during land use hearings conducted in Coleman.

A member and spokesman of a club in that area said the concept of youth hostels was intolerable. Why should we have to put up with that, using our tax money to accommodate and feed these beggars of society? He charged that if permission was given for development of the hostels, the people in the area would constantly be confronted by these poor hungry children. Nobody likes a bum. "This is certainly no place for these freeloading bums of society." Speaking of thousands of Canada's youth who carry their spirits in a backpack and thumb across the country each summer, this gentlemen, in a sweeping condemnation of all youth, said, "I don't believe they, transient youth, should be allowed within our forestry borders." I believe they should be encouraged to be in our forestry borders as often and as long as possible. And that's the reason I'm here sir.

I speak really on behalf of our youth, all of our youth, but particularly tonight I request that careful consideration be given to the submission of the Canadian Youth Hostels Association. By providing exposure to nature and the outdoors opportunities for hiking, climbing, skiing, cross country skiing and snow shoeing, nature studies, camping and guided activities, I believe the Canadian Hostels Association cannot be excelled.

My family, our friends and I have enjoyed the services and opportunities and friendships provided for many years. The present hostels are well located for these activities, but it is obvious that many more suitably located hostels will be needed if their work is to expand as it deserves to do.

The hostels are well managed, are clean and tidy, offer separate male and female accommodation, cooking facilities, and they are economical. The motto of the association, which has world-wide affiliations and association, is, "Not for myself, but for the group." Discipline is the key word in their management. Lights out at 10:30, some places 11:00. Stay is limited to three days unless otherwise arranged and usually in groups. No intoxicants are allowed. No drugs are allowed. Smoking is by mutual agreement, but there is no smoking in the dormitories where the people sleep. Occupants must wash up and tidy up on leaving. The idea is to leave it better than they found it, if they can do that. They must leave the hostel at 9:00 in the

morning and they can come back at 4:30 to 5:00 in the afternoon unless unsuitable weather conditions prevent them enjoying the outdoors in the usual way.

In no way may these youth hostels be compared with those of urban centres provided for our transient youth, who, by the way, deserve a far better hearing and understanding at other levels. You may ask, why does a doctor put forth such a plea? Why does he spend his time talking like this? I believe I need hardly remind you, or remind anyone of our present day youth problems which we doctors and a host of others who aid and abet us are trying to cope with and are often expected to manage. The list is long and well known, for instance, overuse of drugs, alcohol and tobacco.

Do you know that all levels of government in 1971 netted in tax \$1.85 billion in alcohol? Don't you think we could spend some of that money for our youth and for our chronic alcoholics? Overuse of drugs, alcohol and tobacco, permissiveness with venereal disease, school girl pregnancies, abortions, run-away school children and violence of all sorts - we have established clinics, counselling and guidance centres, crisis centres, rehabilitation and mental health services, a list as long as your arm, and tranquillizers. But our salvage rate and our cure rates are dismally low, in some areas hopeless.

Many of us firmly believe that preventative efforts will secure a far better result as they have proven to do with most other sociological and medical problems. It is my firm conviction that if we spend our time, resources and money in this direction with our young people, we will reap a better reward. These are the age groups and younger who fought to preserve this country and our freedoms in it just 30 years ago now. I was there. These are the people, the age groups who will respond to our efforts. It will help to solve our problems in the near future if we make some effort on their behalf and offer them opportunities to do their 'thing' and, at the same time, enjoy our great outdoors in their ever increasing leisure time. The Canadian Youth Hostels Association, in all its ramifications and associations, can offer them a wide and varied range of opportunity in our western slopes and parks.

It has been said, "As we look after our sick so shall we measure our Christianity." I submit, Mr. Chairman, that as we look after the needs and development of our young people and children, so shall we measure the greatness of this wonderful land.

MR. KINISKY:

I'm wondering why a person who is so tremendously effective in this work is retired. I think you should go back to work, doctor.

DR. GARDNER:

I've had 40 years at it sir. Now, if I may, I would like to do something that really is very dear to me. I've been asked to introduce Miss Mary Barclay, who was a co-founder of the Canadian Youth Hostels movement in Canada many years ago. This lady and her sister were awarded the Citizenship of the Year by the Junior Chamber of Commerce of Calgary for 1972. Sir, it's my privilege and honour to introduce this lady to you.

MISS BARCLAY:

Miss Mary Barclay. I am here as a representative of the Canadian Youth Hostels Association.



I did not expect any introduction as I prepared my own. I am a former teacher in the elementary schools and I am now a volunteer in the Outdoor Education Program of the Calgary School Board. I am also a co-founder of the Canadian Youth Hostels Association which was founded in 1933, and I am here to plead the case for the establishment of hostels under the CYHA management on the eastern slopes of the Rockies.

First, I should like to say that in 1967 I travelled for six months through the Near East and Europe. Among the highlights of my trip were my overnight stays in 11 of the youth hostels in Europe. In Venice, I was impressed by a boatload of students with their teachers who had come from France to visit the historic sites in Venice. Trainloads of students and their teachers were passing through the station in Zurich. In a castle in Altena where the first youth hostel in the world was established, I met a German teacher and his 18 pupils who were taking a tour of the industrial sections of Germany, travelling the hostel way. The teacher and his class tried out their English by talking to me for 45 minutes. At Elsinore, two teachers and their classes were using the big manor house that serves as a hostel there. In England, in a hostel near Manchester, I joined a school group at the dinner table, and after dinner I climbed the steep hill to the ruins of the castle built at the time of William the Conqueror.

Here in Alberta, we don't have castles or great ancient historical sites to show our children and our visitors, but we have a wonderful wilderness and wildlife such as few countries in the world have preserved. We won't preserve ours either for very long unless we teach our children to know them, to understand them and to love them. No teacher can accomplish that in the classroom.

For 20 years, between 1946 and 1966, I took out small groups of children on weekends, on day trips or overnight hostel trips to try to open their eyes to the wonders of nature and to awaken in them that sense of awe and reverence for higher values than cement structures and automation can give. Today, when I meet those former pupils, they tell me what those outings meant to them. "Leave no litter" was our slogan and numbers of them obey it.

Now I visit the schools with the same message. On Tuesday, June 5, I went out with a class from Parkdale School to Ribbon Creek. There were 18 Grade 6 pupils, 4 teachers and 3 counsellors. Because the hostel could not accommodate 80 people, they camped in the old slate quarry. It was a wonderful experience and the weather cooperated. Had it not, that well organized effort would have ended in sad failure. They had volunteer equipment, and two tents kept falling down. The teachers had to add camp lore and weather uncertainty to the other duties and trials involved in such a project.

Mr. Reg Houghton, the new Supervisor of Outdoor Education for the Calgary Public Schools, told me this morning that 12,000 children took part in the outdoor education program this spring. He told me that hostels with facilities for 60 to 65 would be used by the school board on a year-round basis, September to June, if they existed.

What better place could there be for such hostels than on the eastern slopes of the Rockies at Frank, Livingstone Falls, Ribbon Creek, Bragg Creek, Highwood, Canmore, Nordegg and other areas in our forest reserves? Who are better qualified to teach our children the knowledge, love and respect for their natural heritage than our teachers and parents? Who is better qualified to provide and supervise these facilities than the CYHA, with its 40 years of

experience in the Calgary area and its world wide link with hostel movements in every country of the free world.

I request that in the development of all parts of the eastern slopes, the Canadian Youth Hostels Association be allotted sites where they may carry on their important work in the education of our children and young people. The hostel brochure gives detailed plans of what the association would require.

I also want to thank the three speakers who spoke so kindly of what the CYHA is doing and to show the difference between the Canadian Youth Hostels Association and the youth travelling without a particular program. I'm glad to have the opportunity to distinguish between these two movements.

MR. QUINTILIO:

Dan Quintilio. I was born and raised in the Crowsnest Pass. I believe the remarks made at the Crowsnest Pass meetings should not be taken as the opinions of the total Crowsnest Pass. I think they were the opinions of one man. Mr. O'Keefe made it quite clear that the Fish and Wildlife did not agree with that. I would like to say that I don't think the rest of the Crowsnest Pass agrees with it either.

MR. PENNER:

Alex Penner. I am a school teacher with the Calgary Public School Board.

Our forest reserves are perhaps one of our most valuable resources. We have an increasing amount of leisure time amongst our youth and our youthful generation and they know not how to use it. At the school where I teach we have not engaged in such an extensive program as the one at Woodman, but we have engaged in what is known as a life activities program in which we have taken over 500 students, in a period of about a month and a half, including one weekend camp trip to Kananaskis, which was somewhat of a disaster due to a foot and a half of snow up there. We are not yet affiliated with Canadian Youth Hostels although we have plans for that next year. They have been most cooperative in helping us set up some of our program.

Could we please keep in mind that the forest reserves of Alberta, as established in 1910, were created basically for the protection of our forests and our watershed. But let us try and keep them as something more than that. Let's try and keep them as an area where all Albertans may go at no charge and spend leisure time.

Unfortunately, I am in disagreement with the Wilderness Society because to me they wish to create an empire as private enterprise developing multi-million dollar corporations. Our need at this time is for something that is available to all people, not something that requires a four day backpack trip. Not something that requires an expenditure to stay at a lodge, or a membership, or perhaps an exclusive lease of part of our forest reserve lands so that our cabin can be built on it.

I propose that no permanent buildings be allowed within forest reserves. The only permanent buildings I see having a viable place within the forest reserves are those essential for the maintenance of the reserve, or those essential for scientific research to continue the good quality of reserve that we have.

I have travelled throughout the South Pacific, New Zealand and Australia and wherever you run into people who have visited Canada,

they mention the wonderful areas of Alberta that are free, that are not overdeveloped, that are not overcrowded and overpolluted with things that man made and left there.

The existing campgrounds within our forest reserve areas could ideally be expanded to meet the needs for the predicted future. One gentleman mentioned that by 1980 the increase would be four times. Rather than creating new areas, let us further develop the areas that have already been developed by man in these areas.

Let us take the wilderness areas which do have a place in there. Let us put them in the remote areas that are as yet relatively untouched. To create a wilderness area in the Sheep-Highwood region is to shut off a region. I have no survey of this but if any of you have ever driven to Elbow Falls on a weekend you'll have some idea of the volume of traffic in there. If you shut that area off as a wilderness area into which people cannot get handy access, you are going to increase the burden on all other areas in the near vicinity.

This increasing burden was discovered by the Alberta Fish and Wildlife Management with their hunting seasons. They closed one area to the exclusion of another. As a result of this, hunters hunted in one area for two months, moved to another area for two months and then to another area for two months. That has now been minimized, because the areas are opened at about the same time. I suggest that the wilderness area proposes to do the same thing, to create small areas in which we're going to crowd vast numbers of people, and by so doing we are going to lose the heritage that has been ours.

I hope we get out of these hearings what I feel most Albertans want. I hope they will result in our forest reserves being left basically as they are, undeveloped areas where anyone can go for enjoyment.

MR. EICKMEIER:

Jim Eickmeier, a member of the Alberta Wilderness Association. I would like to comment on our specific proposals with regard to the Elbow-Sheep area.

The Alberta Wilderness Association has not proposed closing the road to Elbow Falls and has not proposed closing this area to the general public. There appears to be a considerable amount of misinformation on this subject which we will have an opportunity to correct later in the week.





**LAND USE  
and  
RESOURCE DEVELOPMENT  
in the  
EASTERN SLOPES**

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The following publications prepared by or on behalf of the Authority are available on request while they remain in stock.

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## ENVIRONMENT CONSERVATION AUTHORITY

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Environment Conservation Authority. Brochure. Revised edition. 1973.

Environment Conservation Act, 1970, being chapter 36 of the Statutes of Alberta, 1970, with amendments up to June 2, 1972, including pertinent sections of other acts referring to the Environment Conservation Authority. Office Compilation. 10 pages.

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June - July, 1973

- Information Bulletin Number 1: Terms of reference.
- Information Bulletin Number 2: Current Status Report on Alberta's Eastern Slopes.
- Information Bulletin Number 3: Information Centres and Source Material.
- Information Bulletin Number 4: Commercial Proposals Bulletin.
- Information Bulletin Number 5: Planning Statement - Oldman River Regional Planning Commission.
- Information Bulletin Number 6: Planning Statement - Calgary Regional Planning Commission.
- Information Bulletin Number 7: Planning Statement - Red Deer Regional Planning Commission.
- Information Bulletin Number 8: Planning Statement - Peace River Regional Planning Commission.
- Information Bulletin Number 9: Planning Statement - Athabasca-Yellowhead
- Information Bulletin Number 11: Task Force Position Paper.
- Information Bulletin Number 12: Science Advisory Committee, Ad Hoc Committee Paper on Land Use and Resource Development in the Eastern Slopes.

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Trost, Dr. Walter Raymond. Managing the changing environment; presented to the 1973 Annual Convention of the Alberta Society of Petroleum Geologists, January 18, 1973. 8 pages.

\*Being compiled at the time of this listing.











